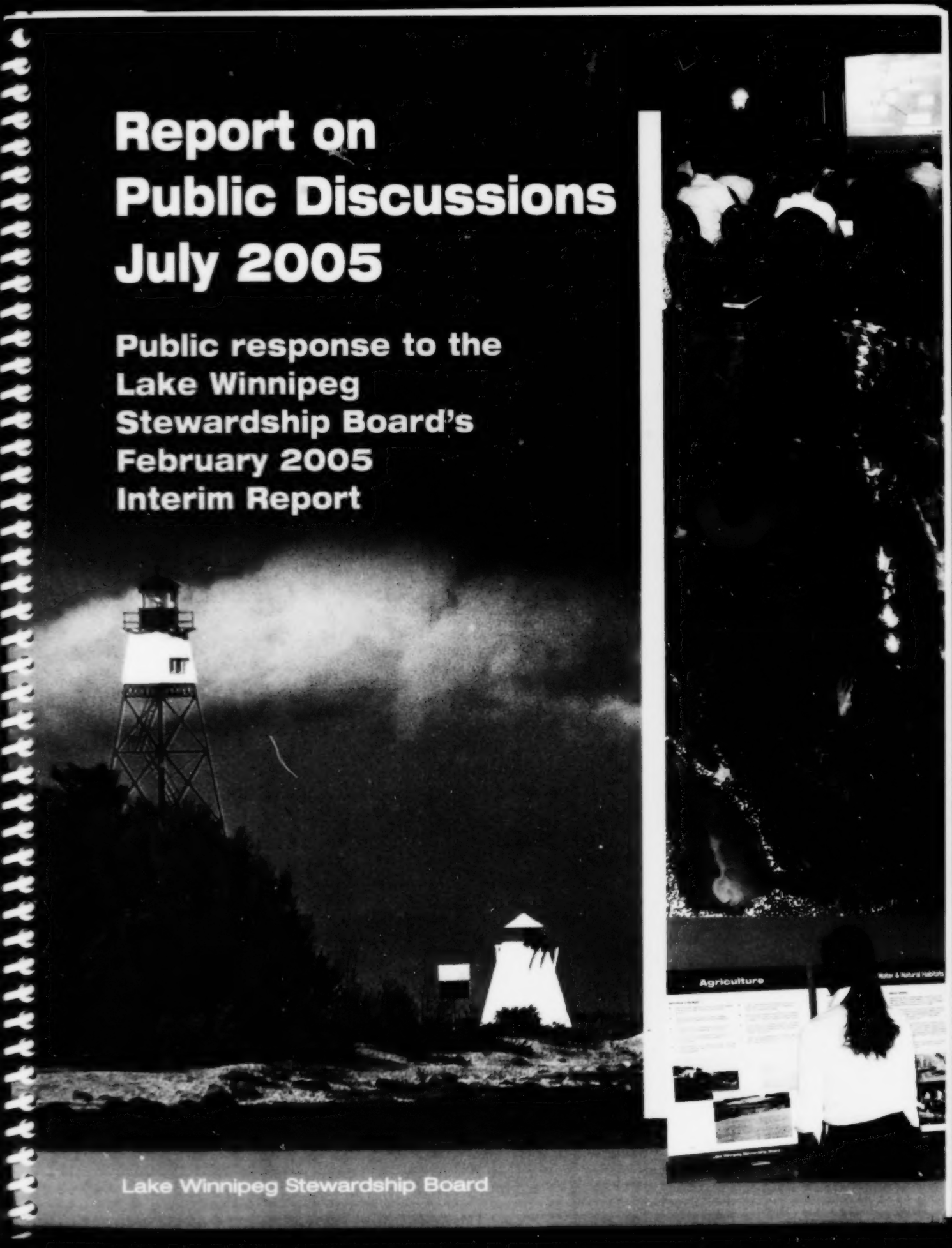
Report on Public Discussions July 2005

Public response to the Lake Winnipeg Stewardship Board's February 2005 Interim Report



Lake Winnipeg Stewardship Board

Report on Public Discussions
July 2005

Public response
to the
Lake Winnipeg Stewardship Board's February 2005 Interim Report

A Report to the Minister of Manitoba Water Stewardship

Message from the Chair

On February 18, 2005, the Minister of Water Stewardship for Manitoba released the Lake Winnipeg Stewardship Board's Interim Report Our Collective Responsibility – Reducing Nutrient Loading to Lake Winnipeg. Following the Report's release, at a series of public meetings, in the media, and on its website, the Board told the story of the stresses on Lake Winnipeg and presented for public reaction its first set of recommendations designed to relieve that stress.

Nobody doubted the veracity of the Lake Winnipeg message. Those increasingly frequent and intense algae blooms on the lake are a signal that certain excesses in our human practices have loaded Lake Winnipeg and its watershed with nutrients far beyond natural balances. If left unchecked, these excesses will seriously degrade the lake's ecosystem. Equally, there was general acceptance that the notion of collective responsibility – everyone in the Lake Winnipeg watershed shouldering responsibility for what's happening – is an appropriate guiding philosophy for an action plan.

This "Report on Public Discussions" follows through on Recommendation 32.0 in the Interim Report which recommended public discussion on the recommendations in the report. In the background to that recommendation the Board said:

"It is recognized that some of these recommendations are far-reaching and cross every sector of society. Manitobans need to be provided the opportunity to critically review many of these recommendations and provide their feedback. It will be important to gain the perspective of all Manitobans".

Individually, or through associations and agencies, Manitobans certainly have responded. This report details that response.

In gauging the effectiveness of the public discussion on the recommendations in the Interim Report, it is important to consider many things. There was strong interest among those who attended the public meetings. Thoughtfulness was evident in most of the individual responses. Well-considered research was apparent in the submissions of agricultural producer associations, municipal organizations, private corporations, environmental organizations, independent scientists, and undergraduate students. We received informative media coverage in all of the centres the Board visited. There were some 7000 "views" of the Interim Report on our website. Board presentations have been made outside the public meetings to interested groups and associations that reached another 600-800 people face-to-face. Invitations to speak and present the Lake Winnipeg story continue at a steady pace. Then, there was the young Manitoban at the public meeting in Gimli, her clear voice rising above the crashing of Lake Winnipeg's waves speaking with simple passion about saving the lake.

Now, as it works towards producing a final report in July 2006, the Lake Winnipeg Stewardship Board will weigh the public responses and consider adjustments to its recommendations. New recommendations may emerge from continuing consultation with a variety of knowledge bases and research sources including oral histories, from the study of issues listed in Appendix F of the Interim Report, and from the need to identify those actions that will have the most immediate impact. As well, the Board will continue to work closely with Manitoba Water Stewardship in the development of long-term water quality objectives for Lake Winnipeg and its watershed. Most importantly, the Board will continue to encourage public input and will continue to present at every opportunity the story of Lake Winnipeg emphasizing the collective responsibility we all share.

There is no time to waste.

Bill Barlow, Chair
Lake Winnipeg Stewardship Board

Memorandum

To: **Honourable Steve Ashton, Minister of Water Stewardship**

From: **The Lake Winnipeg Stewardship Board**

Date: **June 30, 2005**

Re: *Report on Public Discussion: Our Collective Responsibility – Reducing Nutrient Loading to Lake Winnipeg*

The Lake Winnipeg Stewardship Board is pleased to submit this report on public discussion regarding the recommendations contained in its Interim Report, *"Our Collective Responsibility – Reducing Nutrient Loading to Lake Winnipeg"*. The input received from the public during the consultation process will be valuable to the Board as it works toward the preparation of its final report in July, 2006.

Mr. Bill Barlow
Chair

Ms. Vera Mitchell
Member

Ms. Bev Smith
Member

Mr. Garry Brown
Member

Mr. Sam Murdock
Member

Mr. Norman Stagg
Member

Mr. Helgi Einersson
Member

Mr. Chris Pawley
Member

Mr. Gary Wasylowski
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Mr. Les Felsch
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Mr. Alex Salki
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Mr. Dwight Williamson
Member

Dr. Don Flaten
Member

Mr. Nick Szoke
Member

Ms. Halina Zbigniewicz
Member

Mr. Robert T. Kristjanson
Member

Right Honourable Ed Schreyer
Member

Executive Summary

In its February, 2005 Interim Report *"Our Collective Responsibility – Reducing Nutrient Loading to Lake Winnipeg"*, the Lake Winnipeg Stewardship Board presented 32 sets of recommendations directed at protecting Lake Winnipeg and improving its state of health. Manitoba's Minister of Water Stewardship Steve Ashton asked the Board to undertake public discussion on the report, with special emphasis on four of the recommendation areas, but inviting comment on the entire report and all its recommendations.

Overall response to the report was very positive. Many respondents commented the report was balanced with respect to "collective responsibility", and congratulated the Board on its efforts. More than 125 submissions – feedback forms and written responses combined – were received from individuals, organizations, and various levels of government.

Based on the contributions of those who participated, modification of some of the recommendations may be required to address specific issues raised during the public participation process.

The potential financial impact to municipalities, towns, and the agriculture industry for implementation of many of the recommendations listed in the report was a common concern. The suggestion was frequently offered that most new initiatives listed under the recommendations must be subject to cost-benefit analyses. This was especially true in dealing with municipal wastewater and sewage treatment issues, such as the expanded capacity of municipal lagoons.

Better enforcement of existing environmental legislation, including better monitoring and more inspections of facilities and operations was requested. Some participants called for stronger legislation, but many preferred to employ education and incentives to achieve the aims of the Board. Education, both in schools and for the general public, received strong support from all sectors.

Many respondents pointed to the large contribution of nutrients to Lake Winnipeg originating from outside Manitoba. In general, continued or enhanced communication with these jurisdictions to effect a reduction of these nutrients, in particular from the United States, was strongly encouraged.

Many people felt that individuals could do more to reduce nutrient loading to the environment such as reducing the use of phosphorus-based fertilizers for cosmetic purposes and using phosphorus-free household cleaning products.

Additional scientific research on Lake Winnipeg was generally supported. It was recognized that issues such as the impact of Lake Winnipeg regulation on nutrient dynamics are not well understood, and need to be further investigated.

The Board will give thorough consideration to all the responses it received during the public discussion process in the review of its recommendations, in preparation for the completion of its final report in July 2006.

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Acknowledgements

The Lake Winnipeg Stewardship Board would like to acknowledgethe support and contribution of the Technical Secretariate, Sharon Gurney (Manitoba Water Stewardship). The work of Alexandra Bourne (Manitoba Water Stewardship) is also gratefully acknowledged. The writing and editing support of Buzz Crooks (Beaverbrook Communications) was also an important contribution to the report. The use of the satellite imagery on the report cover is courtesy of Greg McCulloch of the University of Manitoba.

The contributions of those who participated in the public discussion process is especially appreciated, since this feedback will be valuable in guiding the Board in the preparation of its final report.

In February 2003, Manitoba Conservation (now Manitoba Water Stewardship) Minister Steve Ashton unveiled a provincial action plan to protect Lake Winnipeg. Among the six points in the Lake Winnipeg Action Plan was the establishment of the Lake Winnipeg Stewardship Board. In July 2003, the Board was formally established. Appointees to the Board (Appendix 1) represent a cross section of Manitobans having an interest in improving the health of Lake Winnipeg.

The Board was directed to assist the Provincial Government in implementing the Lake Winnipeg Action Plan, and to identify actions necessary to reduce nitrogen and phosphorus loading to Lake Winnipeg to pre-1970 levels. This interim goal calls for a reduction of 13 per cent in the loading of nitrogen to Lake Winnipeg, and 10 per cent for phosphorus.

In its Interim Report, released by Minister Ashton in February of 2005, the Lake Winnipeg Stewardship Board presented 32 sets of recommendations directed at protecting Lake Winnipeg and improving its state of health. For each recommendation, a time frame for initiating implementation was suggested. The Board also recommended who should be responsible for implementing each of the recommendations.

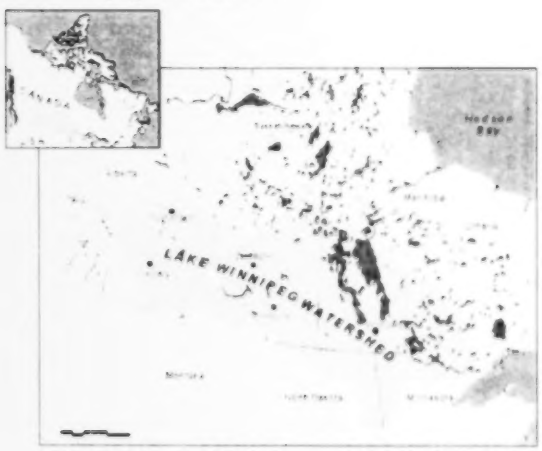
In the Minister's February 18th 2005 news release (Appendix 2), the Government announced action on 23 of the sets of recommendations. In addition, five sets of recommendations were referred to other government departments and agencies who are better positioned to implement them.

Minister Ashton requested that the Board undertake a focused public discussion on the report, with special emphasis on four of the 32 sets of recommendations:

- 2.0: Nutrient Loss from Confined Livestock Areas and Over-wintering Sites;
- 10.0: Cosmetic Use of Phosphorus-Based Fertilizers;
- 21.0: Storage Requirements for Municipal Lagoons; and
- 24.0: Septic Field Alternatives.

While the Minister asked the Board specifically to undertake public discussion on these four areas, the Board invited comment on the entire report and all of the recommendations, and on Appendix F of the Interim Report – Issues for Further Deliberation. The responses from this public discussion process are summarized in this report.

Lake Winnipeg Watershed.



Background

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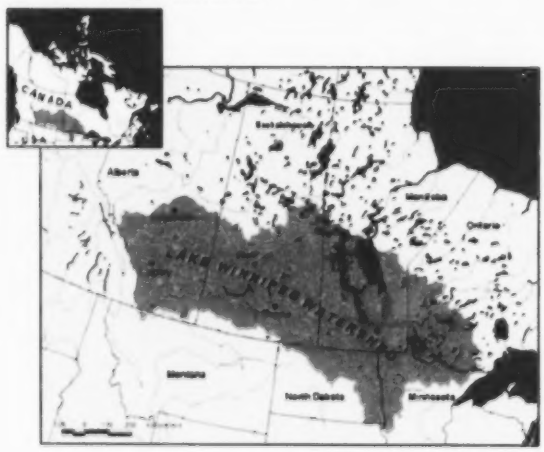


What you told us

A Summary of Public Feedback to the Interim Report

Introduction

Overall response to "*Our Collective Responsibility – Reducing Nutrient Loading to Lake Winnipeg*" has been very positive. Many individuals and groups, such as the Manitoba Habitat Heritage Corporation, Manitoba Pork Council, the Upper Assiniboine River Conservation District, and Ducks Unlimited Canada, to list only a few, complimented the Board on a balanced, well-rounded and informative report. Many other respondents expressed their sincere appreciation for the opportunity to participate in this important initiative.

During the consultation process, the public was encouraged to provide comments and suggestions to the Board through a variety of methods including written submissions, discussion with Board members, an on-line response form, a printed version of the on-line form (Appendix 3), and through public meetings. Through April and May, 2005, the Board held seven public meetings throughout the province. Table 1 details the dates and locations of the seven public meetings.

Table 1: Public Meetings Locations, Dates, and Attendance

Location	Date	Attendance
Brandon	Tuesday, April 19	40
Steinbach	Thursday, April 21	22
Dauphin	Thursday, April 28	19
Pine Falls	Tuesday, May 3	30
Winnipeg	Thursday, May 5	66
Gimli	Tuesday, May 10	44
Norway House	Tuesday, May 17	15

The public meetings were advertised by various means. Newspaper ads were distributed to several Manitoba newspapers (Appendix 4). In addition, the Board mailed out 450 copies of the report, feedback form, and public meeting poster to rural municipalities, environmental organizations, government offices, First Nations, libraries, agencies, and organizations. An invitation to attend the meetings and provide feedback on the report was distributed by mail and email. The Lake Winnipeg Stewardship Board website, (www.lakewinnipeg.org), also provided information on the public meetings, and electronic copies of the Interim Report and its executive summary.

Board members were generally pleased with how the public meetings went. The process worked well and the format was effective. Those in attendance where very engaged, taking time to thoroughly review the displays, and listen to a presentation given by the Board Chair. Excellent feedback and discussion occurred at each of the public meetings.

Below: Board Member Les Felsch and Board Chair Bill Barlow (Right) listen to public comments at Gimli.

The Board provided a feedback form on its website which could be completed and filed electronically or printed and completed by hand. The website appears to have been an effective way to reach Manitobans. For the period from February to the end of May 2005, there were more than 3,400 visits to the website. (Note: Total visits do not take into account multiple users from a single terminal, such as schools, libraries.) There were nearly 7,300 downloads of the Board's Interim Report. (See Appendix 5: Website Use Summary.)

Every response, regardless of form or content, is valued, and will be given due consideration by the Board in the preparation of its final report.

More than 125 submissions – feedback forms and written responses combined – were received from individuals, organizations, and various levels of government. Each Board member was provided copies of the submissions. Unfortunately, it is not possible to include each of the specific comments in this report. However, every response, regardless of form or content, is valued, and will be given due consideration by the Board in the preparation of its final report.

Copies of submissions from those who have consented to have their comments made public will be placed in the public registry. Locations of the public registry are listed in Appendix 6.

A summary of the responses to four of the 32 sets of recommendations that received special focus during the public discussion process is presented in the following pages. Comments on the remaining recommendations and other issues follow.

For each of the selected four recommendation areas, the number of responses is presented in tabular form separately for Individual Responses, and for Organizations, Groups, and Agencies. This breakdown recognizes the constituent support many organizations and agencies may have. For example, while an organization's response may be recorded as a single response, that organization may represent as many as several hundred individuals. Groups in this category include towns, municipalities and municipal organizations, conservation groups, agricultural producer groups, businesses, environmental interests, and similar entities.

Below: The Red, Winnipeg, and Saskatchewan rivers account for more than 80 per cent of the inflow into Lake Winnipeg. (Illustration courtesy of the Lake Winnipeg Research Consortium.)

A number of groups and organizations, some of Manitoba's cities, First Nations, and other interest groups, have not yet taken the opportunity to submit formal responses to the Board's Interim Report. It is incumbent upon the Board over the coming weeks and months to approach these groups to allow them the opportunity to comment.

The Board Chair continues to appear before groups to present the findings of the Board. Since the release of the Interim Report, he has made presentations to the Southern Chiefs Association, the Manitoba Liberal Convention, the Association of Professional Engineers and Geoscientists of Manitoba, the City of Dauphin, the Association of Manitoba Municipalities, and the Black River First Nation. This activity has had the effect of generating responses to the recommendations, and is creating additional interest in this evolving, on-going process.

Recommendation 2: Nutrient Loss From Confined Livestock Areas and Over-Wintering Sites

Background

Livestock manure is a significant source of phosphorus in the environment. Throughout agricultural Manitoba, nutrients from livestock manure are lost from confined areas such as feedlots and wintering sites. During spring runoff and summer precipitation events, water running through these areas can accumulate and transport substantial quantities of nitrogen and phosphorus. The risk of nutrient transport to surface water is higher where land is sloped and the soils provide poor infiltration. In addition, the runoff from these sites may also contain other contaminants such as pathogens (*e.g., Escherichia coli* O157) and livestock pharmaceuticals.

Recommendations

2.1 Drainage from confined areas should be directed to retention basins, grassed buffer strips, and constructed wetlands, or other effective nutrient reduction practices should be employed.

2.2 Where possible, holding areas and wintering areas should be used on a rotational basis to prevent a build-up of nutrients in the soil. Otherwise, manure in confined holding areas should be regularly removed and applied to crop or pasture lands at agronomic rates.

2.3 Legislation should be reviewed and revised where appropriate to include small as well as large livestock operations, and to ensure that new or expanded confined operations are constructed to meet contemporary environmental standards.

2.4 Government should intensify its agriculture extension programs (such as those offered by Manitoba Agriculture, Food, and Rural Initiatives) and those delivered in partnership with existing or new programs to help producers assess the environmental risk of their operations, and to provide advice on how to prevent the contamination of groundwater and surface water.

Timeframe: Medium-term
Who should implement: Province of Manitoba

Table 2a: Summary of Individual Responses to Recommendation 2.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
2.1	62	63	22	2	2	11
2.2	63	52	33	5	0	10
2.3	62	44	35	3	3	15
2.4	63	65	22	0	2	11

Table 2b: Summary of Organization, Agency, and Group Responses to Recommendation 2.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
2.1	22	18	55	9	0	18
2.2	21	19	57	9	0	15
2.3	22	23	36	23	0	18
2.4	20	30	60	0	0	10

Public response

As public feedback would attest, respondents were very much in favour of the recommendations related to this issue. Many expressed general concern over the potential for groundwater and surface water contamination from livestock containment areas. Suggestions for resolving the problem ranged from limiting the number of livestock within a given area to an outright ban on future intensive livestock operations.

However, the most common reservation expressed relating to these recommendations was the issue of the affordability of applying these solutions to the problem, especially for smaller producers. Respondents felt that installing retention ponds and constructed wetlands could represent a significant cost. In addition, providing alternate stock watering systems would also be a necessary expense when rotating holding areas and wintering sites, provided land was available to accommodate the move. These points were raised by the Manitoba Cattle Producers Association and the Keystone Agricultural Producers and others, such as Member of Parliament, James Bezan. It was suggested that less costly options should be considered, or a phase-in period allowed. It was also felt that the development and implementation of individual manure management strategies could also put a burden on smaller producers.

Manitoba Wildlands expressed concern that the report does not specifically address the issue of siting intensive livestock operations (ILOs). In their opinion, hog barns and ILOs should not be licensed and constructed in areas that pose great risk for Lake Winnipeg groundwater flows, and nutrient loading. They called for a moratorium on the establishment of ILOs in the Red River Valley where many wells are contaminated or at risk. Certain areas should be "off-limits".

While Recommendation 2.0 was primarily related to cattle and other pastured livestock, many took the opportunity to discuss the issues surrounding hog operations. It should be noted that recommendations 4.0, 5.0 and 8.0 do have application to the entire agricultural industry, including hog operations.

Comments related specifically to intensive hog operations are summarized in "Issues Raised by the Public Not Addressed Specifically by the Interim Report", page 39.

Recommendation 2.1: Drainage from confined areas should be directed to retention basins, grassed buffer strips, and constructed wetlands, or other effective nutrient reduction practices should be employed.

In regard to the issue of cost for installing these management practices, the Manitoba Cattle Producers Association (MCPA) and the Keystone Agricultural Producers (KAP) each pointed out there is no indication in the recommendations whether incentives would be available to help in implementation. The MCPA indicated there is a need for additional scientific evidence to suggest these actions are required.

A constructed wetland.

One respondent expressed a concern over the lack of qualified people in rural areas to provide professional planning, design and analysis, and installation of structures such as retention ponds, and suggested guidelines are currently not in place to ensure retention basins are well designed.

One environmental scientist said the effectiveness of vegetated buffer strips and wetlands in reducing phosphorus from feedlots and livestock standing areas is vastly overstated, primarily because they are not functional during snow-melt runoff.

The Concerned Residents Of Winnipeg expressed the concern that retention basins provide a breeding ground for mosquitoes.

Recommendation 2.2: Where possible, holding areas and wintering areas should be used on a rotational basis to prevent a build-up of nutrients in the soil. Otherwise, manure in confined holding areas should be regularly removed and applied to crop or pasture lands at agronomic rates.

One submission to the Board outlined the complexities of rotating winter feeding areas which would require a willingness to change and a major shift in management, feeding methods, equipment required, method of water supply, and many other steps necessary to achieve a successful rotational winter feeding area program. It was suggested that incentives should be available to producers to remove manure from the areas in a timely manner.

One Gimli resident suggested that spreading lime on livestock feeding and holding areas would help purify the accumulated manure.

Both the Manitoba Cattle Producers Association and the Keystone Agricultural Producers noted that it is not always possible for producers to rotate their holding and wintering areas. For example, there may not be ready access to water or shelter. As suggested earlier, these organizations are concerned about the potential negative financial consequences for producers if they are forced to source new holding and wintering areas. They support the Board in presenting the option of removing manure.

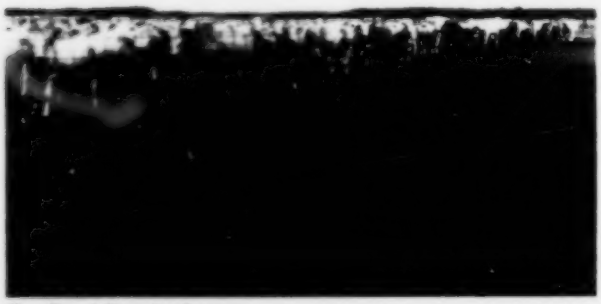
The Rural Municipality of Macdonald said that any measures introduced to deal with nutrient loss (from livestock operations) must be sensitive to the current economic realities of the industry.

On the issue of manure spreading, a councillor for the Rural Municipality of Ste. Anne claimed that land clearing is still occurring in his area simply to provide new spread fields. Many of these areas are swampy, he said, and should be retained as water retention and recharge areas.

Others held strong opinions that manure spreading should not be allowed, especially in drainage areas such as near ditches, lakes, creeks, and rivers, and that manure should not be applied to the same field two years running.

A Winnipeg resident argued that large agricultural facilities should be required to have their own sewage treatment facilities (lagoons) and they should be required to meet the same requirements as municipal lagoons for small communities.

A few respondents felt that Recommendation 2.2 was phrased as two questions in one, and therefore deserved a "no comment" reply.



Confined livestock area.

Recommendation 2.3: Legislation should be reviewed and revised where appropriate to include small as well as large livestock operations, and to ensure that new or expanded confined operations are constructed to meet contemporary environmental standards.

The reference to "small" operations was raised in a number of replies. The concern was centered on a small operator's ability to afford the anticipated cost of meeting new standards in the operation. One suggested if that was the case, perhaps a simplified manure management plan could be adopted which would require soil testing and manure testing for the purpose of rate determination. It was hoped that this measure would at least encourage the use of beneficial management practices.

One reply suggested that all operations, large and small and of all types should be treated the same, and that older operations should be brought up to present standards over an acceptable time frame. Commenting further, the respondent said that since intensive livestock operations (hog operations) must follow specific regulations for handling and storage of manure, operators with cattle, sheep, horses, and poultry should have to follow the same regulations and controls.

The Manitoba Cattle Producers Association (MCPA) said evolving scientific evidence must be used in determining "contemporary environmental standards". They also cautioned that additional regulations may act as a deterrent to changes in management practices because costs can become a determining factor in a producer's ability to participate.

The Keystone Agricultural Producers (KAP) questioned whether action taken under this recommendation would bring an end to winter manure spreading, the only option currently available to many small producers.

Other comments included a need for regular government inspections of confined livestock operations to determine compliance, and that producers must take appropriate action based on an environmental assessment. One reply suggested that the cost of (additional) inspectors for this purpose would be a cost-effective measure.

Some (including the MCPA, KAP, and Manitoba Wildlands) expressed a need to further clarify and explain the term "contemporary environmental standards", calling the term vague.

Recommendation 2.4: Government should intensify its agriculture extension programs (such as those offered by Manitoba Agriculture, Food and Rural Initiatives) and those delivered in partnership with existing or new programs to help producers assess the environmental risk of their operations, and to provide advice on how to prevent the contamination of groundwater and surface water.

The Manitoba Cattle Producers Association pointed out that its members are interested in sustainable development, and recognize that sound practices provide long-term benefits. They already participate in numerous initiatives to protect water resources, such as the Managing the Water's Edge program.

Whether there is enough (government) staff available to implement the extension programs this recommendation suggests was questioned.

Summary of Comments Related to Recommendation 2.0

Response through the feedback forms was heavily in favour of all the recommendations in this section. However, representative organizations from the farming community, such as the Manitoba Cattle Producers Association and the Keystone Agricultural Producers, as well as others in the industry, expressed serious concern over the added costs for remedial measures such as retention ponds, constructed wetlands, and rotating holding and wintering sites. They contend that the imposition of the same standards on small operations as on larger operations would be an unnecessary burden on an already fragile industry. In addition, a concern was expressed concerning the lack of qualified individuals to assist in the proper planning, design, and implementation of these measures.

Recommendation 10: Cosmetic Use of Phosphorus-Based Fertilizers

Background

Although the use of phosphorus-based fertilizers for cosmetic purposes is likely a relatively small contributor to the overall nutrient loading to Lake Winnipeg, it deserves attention. Fertilizer use on lawns is widespread in urban centres in Manitoba. Many lakeside cottage owners also use fertilizers on lawns and gardens as do some cottage owners within Provincial and Federal parks. In addition, fertilizers are often applied to properties surrounding Provincial and Federal government buildings.

In the vast majority of situations, these fertilizers are applied in the absence of a soil test which would determine whether the soil is actually deficient in nitrogen or phosphorus. While phosphorus is an essential plant nutrient for lawns, many of Manitoba soils have an abundant supply of natural phosphorus and additional phosphorus will not be of benefit. Over-application of fertilizers in these instances is likely widespread. Also, when fertilizers are broadcast over lawns, some will unintentionally be applied to impervious surfaces such as sidewalks and driveways. There is a significant risk that this "over-spread" will be washed into storm drains which lead to rivers and lakes.

As of January 1, 2004, a law came into effect in the St. Paul and Minneapolis metropolitan area in Minnesota that restricts the use of lawn fertilizers. In this region, fertilizers may not contain phosphorus, and in Greater Minneapolis, the phosphorus content is restricted to no more than three per cent. It is illegal to spread fertilizer on hard surfaces such as sideways and driveways.

The use of phosphorus-based fertilizers for cosmetic purposes deserves attention.

These restrictions do not apply to fertilizers used on agricultural crops, flower and vegetable gardens, or on golf courses.

Restricting the use of phosphorus-based fertilizers for cosmetic uses in Manitoba should be considered. These fertilizers could continue to be available to customers that have a soil test report demonstrating phosphorus deficiency in the soil. Commercial lawn applicators would be required to follow these same rules. Retailers should be required to display only those fertilizers that meet the phosphorus limits set out for each region.

Grass clippings contain beneficial plant nutrients. The practice of leaving grass clippings on the lawn so that these nutrients can be recycled should be encouraged.

Before considering the application of restrictions in Manitoba similar to those in Minneapolis, there is a need to determine whether phosphorus restrictions should vary in different regions of the province.

10.1 The Province should explore the option of implementing province-wide restrictions on the use of phosphorus-based fertilizers for cosmetic use in Manitoba.

10.2 The Province of Manitoba and the Government of Canada should implement restrictions on the cosmetic use of phosphorus fertilizers for lawn care on provincial and federal properties.

10.3 Canada should institute a consistent policy for the use of fertilizers for cosmetic use on all Federal lands, including National Parks and First Nation communities.

Timeframe: Short-term
Who should implement: Province of Manitoba; Canada

Table 3a: Summary of Individual Responses to Recommendation 10.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
10.1	61	49	35	8	3	5
10.2	61	54	28	8	2	8
10.3	60	47	37	5	3	8

Table 3b: Summary of Organization, Agency, and Group Responses to Recommendation 10.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
10.1	20	20	45	15	10	10
10.2	20	20	40	20	10	10
10.3	18	22	39	11	11	17

Public Response

Overall, comments to this set of recommendations were primarily directed at Recommendation 10.1, with minimal comment on the remaining two. Therefore, discussion of the responses will be presented together.

Regarding the restricted use of phosphorus-based fertilizers for cosmetic purposes, the Canadian Association of Agri-Retailers (CAAR) expressed uncertainty as to how the Province would ensure compliance without the development of a new bureaucratic infrastructure. CAAR recommended that the cost of developing (and enforcing) restrictions should be evaluated against the actual reduction of nutrients entering Lake Winnipeg. The organization recommended further research in this area.

A group of students of Advanced Limnology at the University of Manitoba Zoology Department, under the guidance of their professor, claimed a focus should be placed on the application of cosmetic fertilizers in cottage communities on the shores of Lake Winnipeg, in particular, but not restricted to, lakefront properties.

In addition, the students pointed out, increased alterations to lakefront properties such as groynes, shoreline vegetation removal, and alteration of shoreline substrata contribute to shoreline erosion, thereby increasing the input of nutrients from fertilizers used on lakeshore properties, as well as nutrients from natural sources such as plant material and the soil. The group strongly recommended Manitoba follow Minnesota's lead in restricting the use of phosphorus-based lawn fertilizers.

The Concerned Residents Of Winnipeg (CROW) said that instead of simply exploring the option (of province-wide restrictions), the Province should *immediately* implement restrictions of phosphorus-based fertilizers. This view was shared by an individual Winnipeg resident. A second Winnipeg resident felt that the "short term" timeframe (six to 12 months) indicated in the report was too long – that the recommendation should be implemented within four months.

CROW also suggested a policy of prevention should be adopted in that all unnecessary and cosmetic uses of chemical fertilizers and pesticides, other phosphorus-based products, and other toxins should be avoided. A Provincial Code such as Quebec's should be considered to prevent unnecessary chemical use.

A year-round resident of Belair pointed out that as the influx of people to the Grand Beach and Victoria Beach areas continues to increase, many bring "high impact" behaviour to the area. One of these is the need for the perfect lawn, both at the cottage and on the golf course. Since drainage of the area to Lake Winnipeg is fairly rapid due to the nature of the soils and the gradients, he said, measures to encourage the avoidance of fertilizers in cosmetic situations are applauded.

A Winnipeg resident said golf courses should be included under this recommendation. But a golf course manager suggested soil testing should occur when applying fertilizer to lawns and parks, and integrated pest management encouraged at all times. He added that elimination of these products could lead to other problems such as increased use of chemicals to control weeds.

A leading supplier of lawn and garden fertilizers pointed out that phosphorus is an essential element for plant health, including turf grass, and not merely a product applied for cosmetic reasons. One of his concerns was that the term "Phosphorus-Based Fertilizer" is misleading since the phosphorus component of fertilizer is generally quite low. The supplier pointed out that controlling erosion, a major source of phosphorus, would be one way of reducing the environmental problem.

A councillor for the Rural Municipality of Ste. Anne felt that the cosmetic use of phosphorus-based fertilizers is probably of limited concern and very difficult to control. The cost-benefit ratio of implementing these recommendations is likely too limited, he said. A Grandview farm couple agreed that, in their view, the cosmetic use of phosphorus is a minor issue, but it provides an opportunity for the general public to become involved.

The Rural Municipality of Riverside opposed the recommendation, indicating that it is a drastic measure and the economic impact would be devastating to rural Manitoba, adding that any limitations cannot include agricultural activities. They said restrictions could compromise lawn health which could lead to weed problems, an opinion shared by the Rural Municipality of Macdonald.

Member of Parliament James Bezan said healthy, well-fertilized turf improves soil, reduces erosion, reduces weeds, and therefore reduces the need for chemical weed control. He recommends consultation with the recreation and landscape industries.

A Neepawa area resident felt that by governments restricting the use of phosphorus fertilizers on their properties, they would be leading by example.

Many of the above contributors agreed increased public education is required – on the effects of shoreline erosion, the responsible use of phosphorus fertilizers, phosphorus fertilizer requirements for specific areas of the province, and on integrated pest management in general.

Summary of Comments Related to Recommendation 10.0

The majority of people responding through the response forms was in favour of these recommendations. Of those providing written comments, many called for a speedy implementation. Others suggested the issue was not critical at this time. However, a concern was expressed by municipalities, industry representatives, and others, that the elimination of phosphorus-based fertilizers could lead to other problems, such as increased chemical use to deal with weeds.

Many stated that public education on the use of phosphorus was important.

Recommendation 21: Storage Requirements for Municipal Lagoons

Background

In Manitoba, municipal sewage lagoons are generally required to be constructed with sufficient capacity to store wastewater for 220 days. This is currently the case with older facilities in the province. A longer storage capacity for municipal sewage lagoons would expand the window of opportunity for effluent irrigation and would allow for an enhanced level of treatment. Moreover, it would allow more resiliency during wet periods, reducing the risk of all-too-frequent emergency discharges.

Toward this aim, nutrient data should be gathered from Manitoba and other jurisdictions with similar climates to determine what benefits may be realized from a 400-day storage period as compared to 220 days.

21.1 The Province should explore the option of expanding the storage capacity of new and expanded lagoons to 400 days. Water conservation strategies will assist municipalities in realizing this capacity.

Timeframe: Medium-term
Who should implement: Province of Manitoba

Table 4b: Summary of Organization, Agency, and Group Responses to Recommendation 21.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
21.1	25	12	44	12	16	16

Table 4a: Summary of Individual Responses to Recommendation 21.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
21.1	61	56	31	0	3	10

Public Response

While the responses through the feedback forms quite strongly support this recommendation, there was strong opposition from towns, municipalities, and others.

In a letter to the Lake Winnipeg Stewardship Board, the Association of Manitoba Municipalities (AMM) said that expanding the capacity of municipal lagoons to 400 days would be a problem for municipalities, and the additional costs would

be considerable. The AMM said that when the minimal reduction in nutrient loading this would accomplish is considered, the cost-benefit analysis does not appear to justify the change. The AMM asked that the Board consider other options such as water conservation measures.

In a written submission, the Manitoba Water Services Board stated that since this action could have a major impact on the sustainability of many small centres, costs and benefits must be taken into account.

The City of Steinbach expressed concerns over the potential for a tremendous financial impact, estimating the cost to the city of increasing the capacity of their lagoon at six million dollars. They stated this would not guarantee phosphorus removal, and suggested the focus should be on a target phosphorus level instead of simply increasing the storage period.

The City of Dauphin also found the recommendation unacceptable, claiming the costs and benefits of such a requirement are not realistic. They feel the city would be forced to construct a mechanized wastewater treatment facility instead, at a projected cost to Dauphin ratepayers of five to six million dollars, assuming three-way infrastructure funding. They further stated that lagoon systems cannot reduce nutrient loading to the levels currently being applied by Manitoba Conservation.

A Dauphin resident expressed the opinion that increasing the holding period for municipal lagoons to 400 days could "*possibly represent one of the largest tax increases ever seen in Manitoba history*", while providing little benefit to nutrient reduction.

The Town of Emerson also disagreed with the recommendation, indicating that it is not financially feasible for the town or other municipalities. A Dunrea-area farmer agreed that action under this recommendation would hurt small communities.

The Lake of the Prairies Conservation District asked that this recommendation be addressed cautiously as its implications to municipalities could be onerous. They suggested that incentives to manage the outflow would be money better spent. The Mid-Assiniboine River Conservation District felt the added costs to public and private provincial purse would not be warranted.

The Rural Municipality of Riverside stated that implementing this recommendation would have a negative economic impact on rural communities. The Rural Municipality of Macdonald agreed with the recommendation, but still expressed the concern that this action would represent a significant financial burden to small communities, and would have to be considered with additional funding from the Federal and Provincial governments.

A year-round resident of Belair informed the Board that efforts are underway to improve the lagoons at Traverse Bay. He suggested a review of the lagoons and their capacity to meet an increasing population and year-round demand. He also raised concern over another lagoon, located in the East Beach area of Grand Beach Provincial Park, and called for an inspection of the facility to determine whether it poses a potential source of pollution to nearby recreational facilities and the lake.

The Concerned Residents Of Winnipeg asked that municipal lagoons be designed so that they can be covered to eliminate mosquito breeding.

A Brandon resident suggested this recommendation be combined or be made contingent with Recommendation 13.0 (Development of Nutrient Abatement Plans for Wastewater Treatment Facilities in Manitoba Communities), since extra storage in the sewage lagoons will have no overall benefit if nutrient reduction strategies are not implemented.

A typical municipal sewage lagoon.

Summary of Comments Relating to Recommendation 21.0

While the response from the general public was heavily in favour of increasing municipal lagoon capacity to 400 days, those most closely affected by the move (towns, most municipalities) were strongly opposed. Their primary concern was the potential negative economic impact on communities, especially smaller ones. This opinion was shared by the Association of Manitoba Municipalities, suggesting that water conservation measures should be considered as an option. The Manitoba Water Services Board also expressed concern over the potential financial impact, adding that costs and benefits must be taken into consideration.

Recommendation 24: Septic Field Alternatives

Background

There is concern that septic fields in many regions of the Lake Winnipeg watershed are not functioning adequately. Even in cases where they continue to function as designed, septic fields are simply not an appropriate technology for containing and treating wastes in high-density communities. Septic systems located in heavy clay soils may eventually become saturated, leading to overland flow of waste into drainage ditches. Where there is little soil above bedrock, such as in some areas of the Whiteshell, preferential flow along bedrock may carry nutrient and pathogens directly into watercourses.

Many septic fields are old and are in need of replacement. In addition, many fields are undersized as homes and cottages may have been expanded in size and water consumption increased since the fields were installed.

Resources for inspecting existing septic fields are limited and the inspections are often complaint-driven.In areas of concentrated rural residential development where lot sizes are relatively small, septic systems may not be the most appropriate waste treatment strategy.

Consideration should be given to a wide range of septic management strategies including incentives for implementing alternative waste treatment systems that reduce nutrient loading such as composting systems and biofilters including peat moss treatment systems, and constructed mini wetlands.

The option of separating greywater from blackwater, and the reuse of greywater should be explored. An annual levy could be collected from septic field owners which would help pay for comprehensive inspections and maintenance of the database. A focused educational campaign should be undertaken to provide guidance on how to properly maintain septic fields, and how to recognize when they are failing.

24.1 There is a need to implement regional sewage treatment plants with nutrient removal capabilities prioritizing areas such as those in high residential density, and proximity to waterbodies.

24.2 Where regionalization of sewage treatment is not feasible, or as an interim measure until regionalization is practicable, alternatives to septic fields should be explored.

24.3 The Province should explore the option of instituting an annual levy to recover the costs of conducting an ongoing comprehensive septic field inspection program, and maintaining a septic field database in the Province.

Timeframe: Short-term
Who should implement: Province of Manitoba

Table 5a: Summary of Individual Responses to Recommendation 24.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
24.1	63	60	25	2	2	11
24.2	63	44	41	5	0	10
24.3	62	32	36	13	6	13

Table 5b: Summary of Organization, Agency, and Group Responses to Recommendation 24.0

Recommend-ation	Total Responses (#)	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	No Comment (%)
24.1	20	15	60	5	0	20
24.2	19	21	58	0	0	21
24.3	19	5	48	16	5	26

Public Response

On the issue of septic field alternatives, one Gimli resident felt that municipalities should be more involved in the implementation. A Winnipeg resident agreed, saying that municipalities should take a more active part in passing laws to enforce good sustainable practises. Another respondent suggested that municipalities should undertake programs to locate and seal all abandoned wells (to protect groundwater).

Roseisle Creek Watershed Association suggested literature would be a good start to education on the issue of septic fields.

Recommendation 24.1: There is a need to implement regional sewage treatment plants with nutrient removal capabilities prioritizing areas such as those in high residential density, and proximity to waterbodies.

One Manigotogan resident said that when cottage developments are planned or constructed, the Government should ensure that there are adequate infrastructures to deal with garbage and sewage disposal before approving such developments. Consultations should involve all surrounding towns, communities, and First Nations.

A second resident of Manigotagan said their household is dependent on a pump-out service for all sewage and greywater, and sees the need for a suitable dumping site in the Manigotagan area. His concern is that the proposed lagoon for Manigotagan is not being developed as a regional treatment site for truck-hauled waste.

A West St. Paul resident described the sewage problem in the West St. Paul/Middlechurch area as critical, claiming that residents along the Red River can pump raw sewage into the river with no penalty. He said that septic fields are leaking, and the pumping of greywater and sewage from the septic fields themselves into local ditches occurs. With small lots, he pointed out, there is no room to replace the fields. He sees the solution as connecting to Winnipeg's North End Treatment Plant.

A Gimli resident offered the opinion that new sewage treatment plants should be built large enough to take hog barn waste.

Recommendation 24.2: Where regionalization of sewage treatment is not feasible, or as an interim measure until regionalization is practicable, alternatives to septic fields should be explored.

An East Selkirk resident asked the Province to expedite the review of technologies related to alternatives to septic fields, (a view shared by a Neepawa resident) and to examine how current septic field performance compares to new alternative systems. He said that, if appropriate, legislation should be immediately amended to prohibit the use of the lesser-performing system.

A year-round resident of Belair said that many of the properties in his community use holding tanks and greywater pits, and some have septic fields. He expressed the concern that because of the sandy soils and steep topography, rapidly-draining septic fields present a threat to the lake. He added that much of the Victoria Beach area uses outhouses located on low, flood-prone land. In both instances, he suggested the conversion to holding tanks as soon as possible.

The Concerned Residents Of Winnipeg suggested that since it seems to be general knowledge that current sewage treatment and septic fields are not adequate, a study is not required. They called for the start of a focussed education campaign to encourage the adoption of more acceptable alternatives.

Recommendation 24.3: The Province should explore the option of instituting an annual levy to recover the costs of conducting an ongoing comprehensive septic field inspection program, and maintaining a septic field database in the Province.

Two responses from Winnipeg residents agreed that septic field inspections should be conducted on a regular basis to ensure they satisfy environmental standards. However, a third Winnipegger felt that to inspect all septic fields would take too long and require too many more inspectors, questioning the affordability. Instead, she suggested making it mandatory for septic services companies to compile records of pump-outs each year and submit them to the Government.

A Neepawa resident felt that while some control should be exercised over new facilities and those being repaired or expanded, placing a levy on everyone with a field is unfair and will not be well received. He conceded there may be a necessity to tightly control fields within one mile of a lake or river. A St. Pierre-Jolys resident agreed that sewage facilities located near water bodies should be more closely monitored.

A farm couple from Grandview suggested the focus on septic field problems should be in densely populated areas. They do not support levies, saying instead that the costs of inspections should come out of general revenues. The Pembina Valley Conservation District feels the program is not practical.

A Brandon resident called for heavy fines for individuals who knowingly or unknowingly allow leakage of sewage waste from their property. Another resident of Brandon suggested some individuals deliberately cause septic holding tank leaks to avoid the cost of pump-outs.

Summary of Comments Related to Recommendation 24.0

In general, public input seems to support the concept of regionalization of sewage treatment facilities. The use of alternatives to septic fields is also generally supported. However, the issue of instituting an annual levy to recover the costs of inspections and development of a database was not as widely accepted by those who provided written comments to the Board.

A number of contributors suggested that the focus on addressing septic field problems should begin in densely populated areas, and in areas near water bodies.

Comments Related to Other Interim Report Recommendations

While the public discussion process highlighted the four recommendations discussed on the previous pages, the Lake Winnipeg Stewardship Board also encouraged comments and suggestions related to the other 28 recommendation areas presented in the Interim Report. Replies and comments related to those recommendations are summarized on the following pages.

Recommendation 1

Transboundary and Inter-jurisdictional Issues.

1.1 The Government of Manitoba, with the support of the Canadian Government, should continue to communicate with North Dakota and Minnesota regarding transboundary issues related to the Red River, and ultimately to Lake Winnipeg itself.

1.2 The Manitoba government needs to continue to work with neighbouring jurisdictions in Saskatchewan and Alberta through the Prairie Provinces Water Board to develop commitments to reduce phosphorus and nitrogen loadings entering Manitoba.

1.3 The governments of Manitoba and Canada are urged to initiate discussions with the Province of Ontario with the goal of developing targets for nutrient contribution in the Winnipeg River at the Manitoba/Ontario boundary.

1.4 The Province of Manitoba needs to strengthen its working relationship with Canada on First Nation issues related to impacts on water quality, and each should be prepared to accept their full fiduciary responsibilities as per their constitutional obligations.

Public Response

Widespread support was expressed for this set of recommendations, many stressing that open communication is the key. A number of contributors supported the need for dialogue with other jurisdictions, and in particular, with the United States, claiming that nutrients entering Manitoba must be brought under control if there is to be a significant improvement in Lake Winnipeg water quality.

Widespread support was expressed for this set of recommendations.

The Manitoba Cattle Producers Association (MCPA) strongly encouraged the Lake Winnipeg Stewardship Board and the Provincial Government to examine all sources of nutrient loading to Lake Winnipeg. The MCPA's concern is that there is a risk of over-regulating Manitoba livestock producers and other stakeholders to try to compensate for nutrient loading that does not originate in Manitoba, at significant cost to Manitoba stakeholders. While some nutrient sources are more obvious than others, the MCPA continued, all sources need to be subject to scrutiny. The MCPA pointed out that the Red River is a major contributor to nutrient loading, but much of its basin lies south of the border.

The Canadian Association of Agri-Retailers (CAAR) also suggested that all sources of nutrients to Lake Winnipeg must be examined, emphasizing that nearly 60 per cent of the total phosphorus loading to Lake Winnipeg, and over 60 per cent of nitrogen, originates in upstream jurisdictions. CAAR said there is a need to work with other governments, in the United States in particular, to control phosphorus runoff.

Manitoba Wildlands recommended the establishment of a coordination committee comprised of representatives from other entities within the Lake Winnipeg basin. Its role would include coordination with other jurisdictions in strategic planning, joint projects, and information exchange.

The Lake of the Prairies Conservation District emphasized the need for a consistent and coordinated approach to watershed management and water conservation policy with other jurisdictions.

A Winnipeg resident called for the Federal Government to "buy in" to environmental concerns before it is too late, and to continually examine Free Trade agreements related to our natural resources.

Another Winnipegger felt there is a need for a much more aggressive approach to curtailing the source of pollutants coming from both the U.S. and other provinces. Support from all levels of government and industry in both countries will be required, he said, and suggested the International Joint Commission could play a major role. Awareness was suggested as the first step toward a solution.

The Devil's Lake outlet drew a great deal of attention. Comments received on this issue are summarized in, "Issues Raised by the Public Not Addressed Specifically by the Interim Report", page 39.

Nutrient Loss from Confined Livestock Areas and Over-wintering Sites.

Recommendation 2

See page 9 for detailed discussion.

Livestock Access to Riparian Areas and Waterways.

Recommendation 3

3.1 Livestock producers should be directed through incentives, education, and regulations to implement measures to protect riparian areas and waterways, such as managing livestock access in riparian areas and providing off-site watering structures.

Public Response

The Manitoba Cattle Producers Association (MCPA) and students at the University of Manitoba Zoology Department both pointed out that most producers are very aware of the environmental impact of livestock on riparian areas and are moving towards restricted access and providing off-site watering. The MCPA added that these actions are often taken at considerable cost to the producer, a point that was supported by the Keystone Agricultural Producers (KAP).

Incentives were supported as a means of encouraging further action on this issue by producers.

These groups, as well as the Lake of the Prairies Conservation District, all support incentives as a means of encouraging further action on this issue by producers. KAP stressed that incentives must reflect the realities of the industry and the benefits received by the general public. The MCPA would welcome input into the development of these incentives.

The University of Manitoba students felt that in addition to added incentives, the Riparian Tax Credit should be continued and be publicized more effectively. They also suggested an increased communications and extension effort, perhaps through Conservation Districts.

Below: A healthy riparian area.

Recommendation 4 — Soil Fertility Testing on Agricultural Land.

4.1 Develop strategies that promote and support annual soil testing. Provide the tools necessary to make sound agronomic decisions.

4.2 Consider incentives and subsidies for producers conducting soil testing, similar to private drinking water testing subsidies.

4.3 Ensure that soil test laboratories are accredited, and are using accredited analytical methods and fertilizer recommendations that are appropriate for Manitoba soil, crop, and climatic conditions. Soil test recommendations need to reflect the difference between commercial and organic fertilizer use.

4.4 Ensure that soil test recommendations and reports are user-friendly and informative to producers.

4.5 Enhance education on the economic and environmental benefits of soil testing.

Public Response

The availability of incentives and subsidies for annual soil testing was supported by the Manitoba Cattle Producers Association (MCPA), the Canadian Association of Agri-Retailers, the University of Manitoba Zoology students, Member of Parliament James Bezan, and the Lake of the Prairies Conservation District.

The Keystone Agricultural Producers (KAP) said that soil testing should reflect the method of application and the amount applied, and does not see the benefit of differentiating between commercial and organic fertilizers. On the other hand, the MCPA felt that soil testing methods and recommendations should recognize the differences between commercial fertilizers and animal manure. The MCPA noted that commercial fertilizer is often applied at a rate many times higher than livestock manure.

Soil testing for nutrients.

A representative of the hog industry pointed out that soil testing is a crucial part of managing nutrients on a farmer's field, and is crucial in developing a nutrient management strategy. To him, encouraging farmers to test their soils makes a lot of sense.

The University of Manitoba Zoology students suggested providing subsidies to grain farmers to plant deep-rooted crops such as alfalfa to extract excess phosphorus and nitrogen from below the annual crop root zone. In areas where phosphorus deficiency is confirmed, testing may cease at the discretion of the regulating body. They also felt that manure application rates in Manitoba should not be solely based on nitrogen levels. Phosphorus limits should be implemented. Improved education and extension is necessary.

"Farmers are well aware of the costs of over-applying fertilizers and do not intentionally do so."

According to KAP, farmers are well aware of the costs of over-applying fertilizers and do not intentionally do so, a point of view shared by the MCPA, and an Interlake farmer. However, this producer did not see the need to soil test every year if proper crop rotations are employed.

The Canadian Association of Agri-Retailers (CAAR) suggested that consultation with professional agronomists in the agri-retail sector would be of great value in finding solutions to nutrient loading to Lake Winnipeg. The Association said its members recommend annual soil testing, and are cognizant of balancing crop requirements with environmental issues.

The Concerned Residents Of Winnipeg insist that soil testing should be a requirement, not simply a recommendation.

Matching Nutrient Inputs with Crop Nutrient Requirements and Exports, and Establishing Soil Phosphorus Limits.

Recommendation 5

5.1 The Province should adopt an interim soil phosphorus regulatory limit for agricultural land in Manitoba by March 2005. This interim regulatory limit should consider soil phosphorus limits set by neighbouring jurisdictions such as Minnesota.

5.2 A terrestrial nutrient budget should be developed for Agro-Manitoba which would assist producers, municipalities, and regulators in siting intensive livestock operations, and managing manure.

5.3 Where excess nutrients are being generated, practical options for exporting manure to nutrient-deficient areas must be considered.

Public Response

The Keystone Agriculture Producers (KAP) and the Manitoba Cattle Producers Association (MCPA) both stressed that if phosphorus limits are to be set, they should be based on soil type to allow producers to work to a solution. The MCPA questioned using Minnesota as a model because significant differences in soil types could exist. The MCPA believes more research is needed into the chemical make-up of cattle manure and the optimum application rates in different soil types.

There was uncertainty about the meaning of the phrase "terrestrial nutrient budget" and how it would help producers in siting of livestock operations and employing a manure management plan. This point was raised by both the MCPA and KAP.

The MCPA questioned how exporting manure to nutrient-deficient areas would be implemented – long distance hauling, responsibility for the cost. According to KAP, before developing the options, nutrient-deficient areas must be identified. The University of Maniotba Zoology students pointed out that transporting manure to different areas could have environmental as well as economic costs.

The Canadian Association of Agri-Retailers (CAAR) said that severe restrictions (on the use of phosphorus) could impact crop yield. CAAR said that it is important that phosphorus limits are based on the varying soil requirements in different parts of the province. They also pointed out that there is better control of the amount of phosphorus in commercial fertilizers than in manure, and that the imposition of restrictions might be better served by focusing on manure.

A Brandon resident says the Province should provide incentives for farmers to apply commercial fertilizers to cropland during seeding or post-emergence, rather than in the fall. The amount of fertilizer lost over the winter and during the spring runoff should be studied, he said, adding that the cost savings of purchasing (and applying) fertilizer in the fall may be negated by the nutrient lost. A Petersfield resident agreed with spring application, and added that manure should only be applied on fields that will not produce runoff (ridges).

An employee of Elite Swine agreed it makes sense to match inputs with outputs of phosphorus when developing a nutrient management plan. Also, phosphorus concentrations in hog manure may be significantly reduced by modifying diets and adding enzymes to the feed. The industry would need time to adapt to phosphorus reduction initiatives. He also suggested that Manitoba Conservation is only receiving about half of the manure management plans which are supposed to be filed by livestock producers with over 300 animal units. One alternative he suggested for encouraging implementation of these recommendations would be to tie support programs to the implementation of BMPs and filing of manure management plans.

Phosphorus is an important element in crop production.

CAAR said that it is important that phosphorus limits are based on the varying soil requirements in different parts of the province.

Citizens for the Responsible Application of Phosphorus claimed that Manitoba Conservation's proposed soil phosphorus limits are far too high. They said that until research is completed, a lower threshold objective of 20 parts per million of phosphorus should be considered. A Grandview farm couple agreed that the proposed limits are too high, adding that the interim recommendations for phosphorus are six to 20 times higher than a crop can use. They proposed no phosphorus should be applied if the soil test is 60 parts per million.

Recommendation 6

Evaluation of Beneficial Management Practices as Nutrient Reduction Strategies.

6.1 Undertake focused research to determine what beneficial management practices appropriate for Manitoba conditions would be effective in reducing nutrient loading to the Lake Winnipeg watershed.

Public Response

The Keystone Agriculture Producers (KAP) insisted that research related to beneficial management practices (BMPs) must be funded by the Province and not be a cost to agricultural producers. The Manitoba Cattle Producers Association (MCPA) recognized the benefits of research, but they said there should be joint involvement of affected stakeholders.

"Research into the time and method of commercial fertilizer application should be conducted."

A class of University of Manitoba Zoology students suggested that research into the time and method of commercial fertilizer application should be conducted, adding that spring application may be a more favourable practice. They suggested nutrient application could be improved with better equipment and improved technologies. But since new technologies and equipment tend to be expensive, incentives and information may be required to encourage a change.

An employee of Elite Swine agreed with the recommendation, expressing the view that there is a general lack of government research in Manitoba on BMPs, adding that the hog industry already contributes to the Manitoba Livestock Manure Management Initiative. He said the involvement of other livestock groups and a more significant contribution from government would be appreciated.

Recommendation 7

Nutrient Inputs from Agricultural Tile Drainage.

7.1 Where feasible, tile drainage water should be directed into retention basins, held and, reused when supplemental water is required for agricultural land.

7.2 Producers considering tile drainage should investigate new tile drainage systems, such as "controlled drainage", which regulates the quantity of water removed at different times of the year, so that excess water and the associated nutrients are not removed unnecessarily.

7.3 The process of obtaining a permit to install tile drainage should be reviewed with the aim of ensuring that water quality issues are considered in addition to water quantity.

Public Response

"Re-use of tile drainage water must be based on science."

The University of Manitoba Zoology students placed water quality as a higher priority than water quantity when it comes to tile drainage since drainage water can be of questionable quality. Monitoring conditions should be placed on a permit when it is issued, they said, and more staff (government) should be available for monitoring.

The Manitoba Cattle Producers Association insisted the reuse of tile drainage water must be based on science. If the practice is feasible, farmers would need time for transition, and some financial incentive to go to the expense of implemention. These views were shared by the Keystone Agricultural Producers.

Integrated Watershed Management Planning and Management.

Recommendation 8

8.1 Manitoba Water Stewardship should establish Watershed Management Districts province-wide that would be responsible for preparing, implementing, and regulating watershed management plans as outlined in Part 3 of the proposed Water Protection Act.

8.2 Watershed Management Districts should be established based on natural watershed boundaries rather than municipal boundaries.

8.3 Watershed Management Districts should be responsible for managing all drainage issues, including in-field drainage activities and the drainage of natural wetlands. The Province should retain responsibility for issuing permits for these projects.

Public Response

A spokesperson for Ducks Unlimited Canada (DUC) expressed the organization's strong support for the integrated watershed management planning approach. However, he thought the focus should be more wide-ranging than drainage. The Lake of the Prairies Conservation District pointed out that there are very good reasons to base watershed management on natural boundaries, but felt that this is probably more of a long-term goal than short term.

Ducks Unlimited Canada expressed strong support for the integrated watershed management planning approach.

DUC also felt that the Lake Winnipeg Stewardship Board should place more emphasis on the importance of developing programs and policies that would conserve the ecological integrity of remaining natural ecosystems, including wetlands, within the basin.

The Lake of the Prairies Conservation District suggested that conservation districts could be involved with integrated watershed management planning, which may lead to better acceptance at the local level.

Member of Parliament James Bezan suggested more detail of how the establishment of Watershed Management Districts would interact with current Conservation Districts is needed.

Drainage of Surface Water from Agricultural Land.

Recommendation 9

9.1 A review of agricultural land drainage networks on a watershed basis should be undertaken. This review should explore the feasibility of reducing the velocity of flow in agricultural drains to allow particulate nutrients an opportunity to settle out. The use of nutrient traps or settling basins should be explored to determine their effectiveness in reducing nutrient loading along drains. This work would include a review of the feasibility of acquiring marginal land and wetland areas that could serve as natural filters for drain water.

9.2 Drain construction and maintenance practices should be reviewed to minimize nutrient loss to the watercourse. This would include exploring vegetation harvesting opportunities in areas where this is not already done.

9.3 All drainage projects where water leaves private property, including the drainage of natural wetlands, should require a permit. Compliance with this requirement should be enforced.

Public Response

Ducks Unlimited Canada (DUC) requested that a distinction be made between drainage on existing agricultural land and drainage for expansion. DUC said the health of Lake Winnipeg would benefit from policies that would stop wetland losses, and incentives should be available to producers to reverse the trend.

A councillor with the Rural Municipality of Ste. Anne described excessive uncontrolled drainage as a major concern in his area. A moratorium on all new drainage in eastern Manitoba was

suggested. He recommended all drainage activities be licensed, based on whether the work is necessary, and the potential impact, and all should be inspected during and after construction.

"Any policies which would affect this very complex issue of drainage should include consultation with farmers."

The University of Manitoba Zoology students supported the use of settling basins, retention areas, low level dams, and grassed waterways. They felt that the acquisition of marginal lands and/or incentives for returning land to natural prairie conditions would be attractive alternatives for the farming community. They also called for more serious consequences for permit violations.

A Winnipeg resident and cottager supported the creation of a very large number of wetlands in the watershed, claiming this could ease flooding, filter nutrients, and help replenish groundwater. Another Winnipegger proposed that retention basins on the Pembina River and its tributaries would help to reduce phosphorus loading and flooding along the border area with North Dakota.

The Keystone Agricultural Producers and the Manitoba Cattle Producers Association both questioned whether permits would need to be issued annually, expressing concern over the inherent administrative difficulties and timing issues. An employee of Elite Swine suggested that any policies which would affect this very complex issue of drainage should include consultation with farmers.

Agricultural land drainage channel.

An Arborg farmer felt that the concern over the contribution of nutrients to the lake from soil and silt carried through drainage channels was overstated, saying that a much larger source of this material comes from lakeshore erosion. In agreement, a Winnipeg resident described the issue of erosion control and riverbank stabilization for the purposes of limiting nutrient runoff as significant. It was recommended that initiatives and research on bioengineering techniques and alternatives to rip rap should be supported and encouraged. The provision of financial incentives (to reduce stream bank erosion) in addition to the Riparian Tax Credit program was suggested.

Recommendation 10 Cosmetic Use of Phosphorus-Based Fertilizers.

See page 12 for detailed discussion.

Recommendation 11 Water Usage, Sewage Treatment, and Related Financing.

11.1 The Government of Manitoba should ensure that all Manitobans are served by wastewater treatment practices that safeguard human health and water quality.

11.2 Manitobans should pay the true cost of the water they consume, and the true costs of the services required to adequately treat wastewater.

11.3 Utility reserves must be established such that monies are available when utility upgrades are required. Monies collected for these reserves need to be protected from competing financial needs.

11.4 In order to promote efficient water use and effective waste treatment, metering of regional water supplies should be implemented and rates should be based on consumption, and the true cost of providing the service.

11.5 Extraneous groundwater inflow into wastewater collection systems needs to be investigated and minimized were feasible.

Public Response

In its written submission to the Lake Winnipeg Stewardship Board, the Manitoba Water Services Board (MWSB) said that it only provides assistance for wastewater systems that meet or exceed standards, and that it has been promoting the "true cost" approach to providing services.

The MWSB stated that it has been encouraging the establishment of utility reserves, but there are issues with the practice, such as local improvements are generally carried out through taxation. The MSWB reported that the Public Utilities Board is reluctant to approve large amounts of funds being raised through water rates. The public does not support paying for works and putting funds aside at the same time because it views that as double-paying. The MSWB also stated that upgrading to environmental standards is an expensive venture and it can be difficult to raise enough money through reserve funds.

"Upgrading to environmental standards is an expensive venture and it can be difficult to raise enough money through reserve funds."

The MWSB pointed out that metering on regional systems is required now, and water restrictors are also required as a demand management initiative. As regional systems are developed, municipalities are assisted in developing "true cost" rates.

In the past, the MWSB has provided assistance in reducing extraneous groundwater inflows. The MWSB has also assisted municipalities in developing by-laws to reduce extraneous flows from entering the sewage system.

Regionalization of Wastewater Treatment Services.

Recommendation 12

12.1 The Province of Manitoba should promote regionalization of wastewater treatment systems.

12.2 Provincial funding through the Manitoba Water Services Board should be explicitly tied to an evaluation of regionalization opportunities. Funding priority should be given to those systems that are employing nutrient removal technologies.

12.3 Comprehensive sewage management plans should be developed for areas of the Province where existing sewage treatment practices (septic fields, holding tanks, lagoons) are not meeting environmental standards.

12.4 There is a need for the Province and Canada/Indian and Northern Affairs Canada to work together more cooperatively on regional sewage management plans.

Public Response

The Manitoba Water Services Board (MWSB) explained that it has been promoting regionalization for 15 years and is presently constructing regional systems in Springfield and Brokenhead. As part of project development, the MWSB reviews all options including regionalization. Recently, the MWSB has encouraged West St. Paul/St. Andrews to partner with Winnipeg, and East Selkirk (St. Clements) to partner with Selkirk. The MWSB explained that regionalization of wastewater systems is not as easy as it is with water, due to the anaerobic nature of pumped sewage and the solids. Priorities are always to use the best technology for the environment, but cost-shared with the client, so cost can be a concern.

As part of project development, the MWSB reviews all options including regionalization.

A Manigotagan resident said the current situation in his community *"cries out for a regional facility"*, adding that a regional facility for solid waste is under construction in the area. Concern was expressed that the new, proposed lagoon for Manigotagan will not be large enough to handle truck-hauled sewage from homes and cottages in the area. To add to the situation, there is an expectation that more homes and cottages will be built in the near future, and more people will be converting seasonal cottages to year-round homes. Also, the contributor said that the treatment facility at Seymoreville is not large enough and more cottages are planned for that community.

A Shoal Lake (Manitoba) resident suggested that the use of dry composted waste as fuel to incinerate other waste may have merit, with the end benefit being power production. In his opinion, small incineration plants in rural communities could be a solution to lagoon discharge and the disposal of manure generated from large livestock operations.

Recommendation 13 Development of Nutrient Abatement Plans for Wastewater Treatment Facilities in Manitoba Communities.

13.1 The Province of Manitoba needs to finalize its Nutrient Management Strategy along with developing a comprehensive prioritized plan for nutrient abatement for all wastewater treatment facilities in the watershed. The comprehensive plan needs to consider whether the application of best practicable technology is sufficient for reducing effluent phosphorus concentrations to 1 milligram per litre or whether best available technologies need to be employed to achieve greater reductions and the plan needs to consider where nitrogen removal is necessary and to what level.

13.2 Nutrient reduction strategies such as biological treatment, chemical treatment, effluent irrigation, constructed wetlands, and other proven technologies need to be evaluated for their effectiveness and practicality given Manitoba conditions and economic circumstances. Source control, pollution prevention plans should also be implemented as measures to reduce nutrient input.

13.3 The Province of Manitoba should continue to require that nutrient reductions be implemented as quickly as possible at the large municipal and industrial wastewater treatment facilities in the cities of Winnipeg, Portage la Prairie, and Brandon.

Public Response

The Manitoba Water Services Board (MWSB) described a principle used in Europe for nutrient abatement plans based on population equivalents. In the United Kingdom, for example, systems serving a 10,000 population equivalent would require a nutrient management strategy. The strategy should review the mechanism for recovering the cost of the nutrient abatement plan. Systems with less than a 2000 population equivalent would only be required to provide secondary treatment. The MWSB agreed that nutrient reductions should be implemented as quickly as possible in communities with a large industrial waste component.

The Roseisle Creek Watershed Association suggested that a mandatory requirement for sewage treatment and nutrient removal could be based on population levels.

The City of Dauphin expressed significant concern over this recommendation.

The City of Dauphin expressed significant concern over this recommendation, indicating that it is aware that nutrient reduction will be a requirement of any revised or new licence. The City said that nutrient reduction, if required, should first apply to those municipalities that would provide the greatest overall benefit to Lake Winnipeg. Dauphin believes the requirement to reduce nutrients in wastewater effluent discharge will result in substantial incremental capital and operating costs, loss of economic development opportunities, and an increase in municipal infrastructure deficit.

The University of Manitoba Zoology students questioned government targets for reducing nitrogen and phosphorus to pre-1970 conditions. They felt that a number of factors such as lake regulation have influenced nutrient dynamics in Lake Winnipeg, and nutrients may not be flushed from the lake during the summer when algal production is highest. They said it is important to understand whether low oxygen conditions are occurring in the lake, and what impact this may have on nutrient loading. They added that in setting nutrient load reduction targets, it will be important to understand nutrient retention and nutrient generation from lake bottom sediments, and how reducing nutrients would impact the lake's fishery, zooplankton populations, and algal production.

Manitoba Wildlands said that given that two-thirds of Manitoba's population lives in Winnipeg and surrounding area, the Province of Manitoba should consider financial participation in the upgrades of Winnipeg's treatment facilities.

Environmental Planning and New Urban and Rural Development.

Recommendation 14

14.1 The Province and municipalities should establish an integrated land and water planning process that is environmentally conscientious and that ensures planned and orderly growth with respect to sewer and water services. This process would encourage planning, rather than discourage growth.

14.2 The Province should ensure that all new rural residential, commercial, industrial, and urban developments are comprehensively reviewed with respect to water and wastewater treatment requirements to protect the environment.

14.3 Developers should be required to consider the cost of the required water and wastewater treatment services and ensure that these are built into the costs of the development (full cost recovery). It is expected that different strategies for wastewater treatment would be required depending on the local conditions.

14.4 There is a need to consider regional wastewater treatment services for new rural residential developments.

14.5 Developers should be responsible for land drainage issues for new residential developments which consider the nutrient impacts of the development and build in strategies to minimize these impacts such as storm water retention and treatment, and erosion control. Developers should be required to implement strategies to retain rainwater and reduce runoff.

14.6 All new urban and rural development projects should be required to incorporate low impact, environmentally-conscious concepts into the design with the aim of reducing environmental service costs to minimize pollution loads. These may include re-use of rainwater, reducing runoff by incorporating more permeable surfaces, and retention ponds.

Public Response

The Lake of the Prairies Conservation District strongly agreed that developers should be required to build in the cost of the required water and wastewater treatment services into the costs of the development. They described a local situation where this has not been done, and there is grave concern for the local municipalities who have no responsibility to create infrastructure for the development. Their responsibility is only to maintain the structures put in place by the developer.

Environmental Licensing Fees.

Recommendation 15

15.1 The Province should look for opportunities to reduce the financial disincentives to those proponents voluntarily improving waste management practices such that the risk of nutrients and other contaminants reaching surface water is reduced. The Province could consider establishing a fund, perhaps within an existing funding program (e.g. Sustainable Development Innovation Fund, or Manitoba Water Services Board) that would be directed towards reimbursing proponents for the cost of the Environmental Licensing Fee, where a demonstrated improvement to the environment is realized.

Public Response

The Manitoba Water Services Board reported that on projects which are cost-shared with them, the environmental licensing fee is part of the project cost and shared with the client.

The Lake of the Prairies Conservation District indicated that a move to reimburse proponents for the cost of the fee is very important, since funds and resources are sometimes not available to do this kind of work.

Recommendation 16 Land Application of Municipal Effluents.

16.1 Effluent irrigation should be promoted and encouraged where feasible, and in consideration of potential health risks.

16.2 Alternatives to the water softener sodium chloride should be explored to ensure wastewater is more suitable for land application (e.g. Potassium chloride).

Public Response

The Manitoba Water Services Board (MWSB) said it has been a leader in the development of effluent irrigation in Manitoba with projects in Roblin and Carberry over 20 years ago. The MWSB, in partnership with the University of Manitoba, has developed guidelines for the development of these types of projects.

The primary purpose of effluent irrigation is liquid disposal, and it should only be considered where crops need the water.

The MWSB brought forward the following points to consider. The primary purpose of effluent irrigation is liquid disposal, and it should only be considered where crops need the water. Also, it is only to be used on forage crops. The municipality should own the land being irrigated. The total cost of installing the system and purchasing the land could exceed one million dollars.

The Canadian Association of Agri-Retailers (CAAR) said the challenges of using municipal effluent for irrigation are similar to those of applying manure to cropland. CAAR said that nutrient content of municipal effluent can vary widely. They suggested a method of determining the nutrient content of municipal effluent should be developed before deciding to use it as fertilizer.

In another submission, concern was raised over the requirements which limit irrigation only to lands identified on the licence. In wet years, effluent irrigation on a limited amount of land can be very difficult to accomplish without harming the land. The use of constructed wetlands to further treat the effluent after the primary treatment was suggested as an alternative.

The Concerned Residents Of Winnipeg said that if potential health risks are to be truly considered, land application of effluent cannot be promoted. In their opinion, spreading sewage on land where it may emit harmful gases and leach into the soil is simply not good sense.

The MWSB would support the use of potassium chloride for individual water softeners but would recommend a municipal water softening system.

Recommendation 17 Leachate Handling.

17.1 The Province should evaluate options to remove leachate from domestic wastewater treatment systems such as the option of a dedicated leachate treatment facility being established within the province. Priority should be given to dealing with leachate which is of poorest quality and highest quantity.

17.2 In order to minimize the amount of toxic substances collected in landfill leachate, the Province should expand opportunities for the public to safely and conveniently recycle and dispose of toxic substances.

Public Response

Manitoba Wildlands recommended an audit of all private, municipal, and business landfills in the entire Lake Winnipeg Basin to identify risks, potential new standards, and lessons to apply to other landfills and solid waste sites. The Concerned Residents Of Winnipeg warned that the pretense that toxins can be safely disposed of encourages their use.

Management of Domestic Septage and Greywater.

Recommendation 18

18.1 The Province should develop a strategy for handling of septage and greywater in an economic and environmentally sensitive manner, in consideration of potential health issues. This should include options for handling these wastes within existing wastewater treatment facilities as well as the option of controlled and managed land application of this waste. Strong deterrents for those who illegally dispose of septage in ditches or other inappropriate locations are required.

18.2 The Province of Manitoba should undertake a review of septage and greywater re-use being employed in other jurisdictions to assess its feasibility for Manitoba conditions. Health risk issues associated with these re-uses need to be fully explored.

"There needs to be incentives such as reduced taxes or grants for citizens to install compost toilets and greywater systems."

Public Response

A Winnipeg couple with a cottage on Lake Winnipeg said there needs to be incentives such as reduced taxes or grants for citizens to install compost toilets and greywater systems. Additional education is required to encourage these systems. All municipalities need to be aware of sewage system alternatives and provide incentives to those who improve their systems, they said. A Brandon resident claimed while new regulations governing the installation of septic fields will address many of the problems encountered with leaking fields, many residents and cottage owners still separate the greywater from the effluent and let it run into a lake or water course.

Water Use Efficiency.

Recommendation 19

19.1 The Manitoba Building Code and the National Building Code should be revised to require all new homes to be fitted with low-flush toilets and low-flow faucets.

19.2 Governments should demonstrate leadership by instituting a program to convert fixtures in government-owned buildings to water saving fixtures. When Government agencies are leasing space, a condition of tenancy should be the conversion of existing fixtures to low water flow alternatives.

19.3 All levels of governments should consider incentives or rebates for homeowners to retrofit fixtures to low flow alternatives. An environmental levee for the purchase of higher volume fixtures should be considered.

19.4 A public education program should be implemented to increase the safe collection and use of rainwater for lawn and garden use.

19.5 Ensure that water users on regional water systems have water meters and are billed on a water use basis, at the full cost of the water supply.

19.6 Consideration should be given to applying higher rates as usage increases. Reduced water rates for large commercial and industrial consumers should be reconsidered.

Public Response

The Manitoba Water Services Board indicated that wherever it has assisted in the development of water system, meters are mandatory, and that most rural water connections are fitted with flow restrictors. A Lac du Bonnet resident agreed with the concepts of water conservation methods and user pay full cost outlined in these recommendations.

Use of constructed wetlands for nutrient removal.

Recommendation 20

20.1 The Province of Manitoba should undertake a focused review of the effectiveness of constructed wetlands as a nutrient abatement strategy. The study should consider local climatic conditions, as well as management requirements such as vegetation harvesting.

Public Response

Natural wetlands provide many benefits.

Ducks Unlimited Canada (DUC) pointed out that constructed wetlands generally are better filters than natural wetlands, but because of their diversity and broad distribution, natural wetlands provide a multi-barrier approach and many other benefits. DUC contends that overall, natural wetlands are net assimilators of nutrients, not sources, but human activities such as partial drainage of a wetland to control its water level can exacerbate or stimulate nutrient loss from wetlands.

A microbiology professor at the University of Winnipeg strongly agreed that a study on the effectiveness of constructed wetlands as a nutrient abatement strategy should be launched. It was suggested that the effect(s) of existing natural wetlands and riparian vegetation on nutrient abatement should be examined. In addition, it should include a proper marsh management plan in order to alleviate nutrient leaching of microbial decomposition (mineralization) products. An examination of marsh drainage practices in the Interlake region of Manitoba was strongly urged.

"Constructed wetlands generally are better filters than natural wetlands, but natural wetlands provide a multi-barrier approach and many other benefits."

A Winnipeg resident and professional engineer said that multi-party discussions with the United States should address the topic of basin-wide wetland construction to manage runoff from the entire Red River Basin. He outlined that the benefits of more wetlands include flood control, nutrient and sediment removal, and replenished groundwater resources. He also indicated that experiments are being conducted in North Dakota to retain runoff on farmland in the spring.

Another resident of Winnipeg considered the speed at which polluted waters reach a waterway a problem, and called for an aggressive program to replace some of the wetlands that once covered southern Manitoba. A resident of Lorette said storage of water in low-lying areas of rural Manitoba should be encouraged and methods of conservation should be implemented. A Gimli resident supported using wetlands as a buffer zone between treatment facilities, lakes, and rivers to be used in times of overflow and for secondary treatment of waste. He contended this would provide habitat and a conservation approach to sewage disposal.

Recommendation 21 Storage Requirements for Municipal Lagoons.

See page 15 for detailed discussion.

Recommendation 22 Stormwater Retention Ponds.

22.1 All new stormwater retention ponds should be designed to maximize nutrient retention without compromising stormwater management needs.

22.2 Monitoring should be conducted to compare managed ponds with unmanaged ponds in their nutrient removal capabilities. Data from other jurisdictions with a similar climate should be collected to help determine the best design and management strategy for nutrient capture under Manitoba conditions.

Below: A stormwater retention pond.

Public Response

A Winnipeg resident called urban runoff likely one of the least studied and monitored sources of nutrients entering Lake Winnipeg from the city of Winnipeg. Besides fertilizer runoff from the city, he suspects the large flocks of waterfowl which frequent Winnipeg's stormwater retention ponds each fall are a major contributor of nutrients. Nutrients deposited in fall are carried away by spring runoff and therefore, are not absorbed by vegetation. He suggested pumping and draining the ponds to substantially reduce water levels prior to the waterfowl migration. This way, more of the nutrients would remain in the ponds into the following summer when vegetation growth and subsequent harvest could remove them. As an alternative, he suggested a flow-through multi-basin system more like a managed wetland with extensive vegetation harvest in early fall.

Nutrient Management Issues on First Nations Communities.

Recommendation 23

23.1 Sewage treatment on First Nation communities must be upgraded to meet both public health and environmental standards. As a minimum, Provincial standards should be communicated to Indian and Northern Affairs Canada and First Nation communities to be used as guidelines.

23.2 Immediate action needs to be taken to remedy malfunctioning or non-existent waste management systems in First Nations communities, and to address the problem of sewage disposal. Alternative waste management systems such as composting systems and constructed wetlands need to be explored.

23.3 Nutrient management strategies which evaluate the sources of nutrient losses, and identify opportunities to reduce or eliminate these losses should be developed in collaboration with First Nation communities. The strategies should include a strong educational component.

23.4 The Province should work towards ensuring that sewage treatment and disposal standards are consistent across the province, including those regulating First Nations and Northern communities.

23.5 Senior levels of government should provide adequate levels of funding within their respective jurisdictional responsibilities, to support education, training, and resourcing to ensure that waste treatment facilities in First Nations communities are properly maintained and operated.

Public Response

The Board did not receive any specific written feedback on this recommendation. However, in a meeting with Black River First Nation in June, 2005, the community members expressed a general concern over the quality of Lake Winnipeg water and that of the rivers leading into the lake. There was agreement that nutrient management issues on First Nations land needs to be addressed, and that Federal and Provincial environmental standards may vary. There were a number of areas of concern expressed including: increased erosion, impact of water level regulation, changes in the biological communities in response to increased pollution, impact of direct cattle access to waterways, influence of high beaver populations on local hydrology, effect of forest harvesting, and agricultural development on native prairie land. The Community encouraged the Board to undertake further public discussion with First Nation communities living along Lake Winnipeg.

Black River First Nation encouraged the Board to undertake further public discussion with First Nations communities living along Lake Winnipeg.

At the public meetings held in Norway House on May 17, 2005 members of the First Nations community expressed concern about the impact of Lake Winnipeg on communities living along the Nelson River. There was a suggestion that further public discussions with these communities is needed. It was also suggested that the report should be translated into First Nation languages.

Septic Field Alternatives.

Recommendation 24

See page 16 for detailed discussion.

Manitoba Water Services Board.

Recommendation 25

25.1 The Province of Manitoba needs to explore options for how nutrient removal upgrades may be best funded, and how Provincial funding through the Manitoba Water Services Board should support the commitments in the Lake Winnipeg Action Plan.

25.2 Manitoba is urged to establish criteria to assist the Manitoba Water Services Board in prioritizing funding requests that would favour implementing regional options for wastewater treatment facilities.

Public Response

The Manitoba Water Services Board pointed out in its written submission that it already has a high priority on regionalizing wastewater treatment systems, and that it has been active in trying to facilitate regional opportunities in the Red River corridor region.

Further, the MWSB indicated that it considers Provincial priorities when funding projects, and conducts a conceptual planning and detailed feasibility study prior to accepting a project for funding. Regional options are considered and given higher priority. The MWSB felt its leadership was critical to ensuring the development of regional systems.

Recommendation 26 Phosphoric Acid Use in Water Supplies.

26.1 The Province should initiate a project to identify the number of communities in Manitoba in addition to Winnipeg and Portage la Prairie that are using phosphorus-based strategies for lead control in water mains and in collaboration with each community, determine the amount of phosphorus lost to receiving water. This evaluation should consider phosphorus removal plans being implemented for these wastewater treatment facilities.

Public Response

Manitoba Wildlands has endorsed a University of Winnipeg professor's comments regarding the use of phosphoric acid in water supplies. The professor feels that more attention to the issue is required in the Board's report. She explained that they have been monitoring Winnipeg water quality for 30 years, and expressed great concern over the increased amount of orthophosphate in the water supply over that time, considering most of that water eventually becomes wastewater.

Since other alternatives to controlling lead pipe leaching (in water supply lines) are available, it was recommended that the use of phosphoric acid for this purpose should not be allowed.

Recommendation 27 Use of Alum as Nutrient Control Strategy.

27.1 A review of the use of alum in wastewater treatment should be conducted. This review would evaluate the resultant concentration of aluminium in the waste sludge and determine whether these levels pose any environmental or health risks. The suitability of applying this type of sludge to land should also be investigated.

Public Response

Comments supplied by a University of Winnipeg professor detailed concern over the use of alum as a nutrient control strategy, due to potential health and environmental risks.

Recommendation 28 Phosphorus Content in Cleaning Supplies.

28.1 Manitoba Water Stewardship should raise the issue of the lack of regulation controlling phosphorus content in cleaning solutions with the Canadian Council of Environment Ministers with a view to having the Federal Government restrict the phosphorus content in those cleaning products currently not regulated. The Province of Manitoba should raise this issue with the Federal Government.

Public Response

A Winnipeg resident contends that some (research) work done in Europe suggests that phosphorus-free detergents may do more harm than good. He warned that alternatives to phosphorus-based detergents may put additional stress on the ecosystem.

Another Winnipeg resident said that regulations on phosphorus content in cleaning supplies should be implemented through a provincial\federal initiative. A Gimli resident indicated the Federal Government should impose limits, bans, and restrictions for phosphorus cleaning supplies and fertilizers. The Concerned Residents Of Winnipeg called for the Federal Government to implement restrictions on all toxic ingredients in cleaning products and require labelling of all ingredients.

Science Needs for the Long-Term Protection of Lake Winnipeg.

Recommendation 29

29.1 On-going research and monitoring will be required on Lake Winnipeg to address outstanding information gaps and to monitor progress towards achieving the established targets for nitrogen and phosphorus. To this end, Manitoba Water Stewardship, Environment Canada, and Fisheries and Oceans Canada are urged to continue their existing process to develop and then implement a collaborative, long-term science plan for Lake Winnipeg.

29.2 The Province of Manitoba should consider jointly funding a Research Chair specializing in hydrological and contaminant transport mechanisms at the terrestrial-aquatic interface, at one of the academic institutions in Manitoba. Support could be provided by both senior levels of government. The establishment of such a position would require the establishment of strong partnerships among other academic institutions in Manitoba and with provincial and federal government departments with a mandate in this area. To assure success, it will be necessary to provide some initial operating funding and to provide annual direction to assist with setting and maintaining research priorities.

29.3 Manitoba Water Stewardship must continue its work towards completing the Nutrient Management Strategy announced in April 2000. In particular, draft water quality objectives for nutrients in Lake Winnipeg that are based upon ecologically-sensitive end-points must be developed as quickly as possible. Following the development of these objectives, broad consultations will need to be undertaken involving the local Lake Winnipeg communities, scientists, contributing sectors within Manitoba, upstream jurisdictions, and others. These long-term water quality objectives will then replace the interim targets identified in the Lake Winnipeg Action Plan.

29.4 Manitoba Water Stewardship must continue its long-term water quality monitoring of streams contributing to Lake Winnipeg and should be encouraged to augment this routine monitoring to better estimate loadings of nutrients from short-term runoff of rain and snowmelt events. It is also important that this monitoring continue in order to track progress towards achieving the targets set for Lake Winnipeg.

29.5 The Province of Manitoba should consider developing and implementing a focused program of applied research aimed at better understanding of the human-induced changes in water flows, seasonal lake residence time, and lake levels on nutrient dynamics relevant to Lake Winnipeg.

Public Response

The Zoology students from the University of Manitoba said increased funding and scholarships targeted for graduate students should be used to encourage universities to conduct more research on Lake Winnipeg. They also consider long-term monitoring programs as essential in understanding the spatial and seasonal trends in Lake Winnipeg over time. They suggested experimental lab and field mesocosm studies could be used to test for the growth-limiting nutrient factor of phytoplankton in Lake Winnipeg. The students also felt there are a number of research needs for Lake Winnipeg including a better understanding of the impact of nitrogen-to-phosphorus

"Increased funding and scholarships targeted for graduate students should be used to encourage universities to conduct more research on Lake Winnipeg."

ratios in the lake in terms of the biological response in the lake. It is important to continue to monitor and collect scientific information, including information on invasive species.

"Considering the gaps in knowledge on nutrient loading in Lake Winnipeg, assigning a Research Chair would be an unbiased way to obtain this information."

A microbiology professor at the University of Winnipeg strongly urged government support for a comprehensive examination of input of inorganic nitrogen\phosphorus into the lake through the decomposition of organic matter by sediment and water micro-organisms. In addition, the establishment of permanent nutrient monitoring stations at strategic points, such as drainage channels into the lake was suggested. In addition, the outflows (from Lake Winnipeg) must be monitored.

The Canadian Association of Agri-Retailers expressed its support for further scientific research, particularly as it relates to developing appropriate methods of limiting nutrient contributions to the watershed by agricultural operations. The Association presented three factors to be considered – the precise amount of crop nutrients required in each region of the province; the cost of implementing regulations and the economic impact on agriculture; and rigorous and thorough research to determine the full implications of indirect nutrient runoff from the land into the watershed.

Below: Satellite image of Lake Winnipeg.

An employee of Elite Swine pointed out that, considering the gaps in knowledge on nutrient loading in Lake Winnipeg, assigning a Research Chair would be an unbiased way to obtain this information. He also suggested research to determine the phosphorus loading amounts that different land uses and human practices contribute to the lake, indicating that priorities could then be set according to the maximum environmental impact. He also felt that research on the impact of using the lake as a hydro-electric reservoir on algae blooms would be valuable.

A Winnipeg resident agreed that the effect of lake level regulation on water quality in Lake Winnipeg needs to be known. Beyond that, the impacts regulated water levels are having on shoreline marsh areas such as Netley Marsh should be examined. He cites the valuable contribution marsh vegetation has in removing unwanted nutrients from water flowing into the lake. A second Winnipeg resident suggested a database should be established for smaller tributaries and watersheds to better understand nutrient loading. The respondent also speculated that rather than controlling nutrient release, nutrients might be removed directly from rivers with large treatment facilities. It was suggested that all projects should undergo a cost-benefit analysis, and that each program should be evaluated as to its effectiveness.

"The effect of lake level regulation on water quality in Lake Winnipeg needs to be known."

Manitoba Wildlands said the capacity to source, map, and measure contaminated groundwater flows into our rivers and Lake Winnipeg should be developed. They urged the timely completion and enactment of Manitoba's Water Quality Standards, Objectives and Guidelines. They called for an examination of the linkages between Manitoba Hydro water power licenses, regulation of Lake Winnipeg, and nutrient loading to the lake, with the objective of providing advice to the Manitoba Government about mitigation or implementing procedures that could improve the situation. Manitoba Wildlands would also like to see a description of the role the Lake Winnipeg Research Consortium will play in addressing the science needs of Lake Winnipeg.

The Tobacco Creek Model Watershed (TCMW) asked the Lake Winnipeg Stewardship Board to consider the TCMW as an important part of long-term efforts to support a science-based water quality solution. The Shoal Lake Water Enhancement Corporation (Shoal Lake, Manitoba) has been gathering water quality data, with the assistance of Manitoba Water Stewardship, since 1987. The corporation has offered to assist in the implementation of the Lake Winnipeg Action Plan.

Education Program Development

Recommendation 30

30.1 The Manitoba Department of Education should design teaching units, credit courses, and upgrade holistic environmental curricula specific to Lake Winnipeg and its watershed for implementation in Manitoba schools.

30.2 An awareness of the issue of Lake Winnipeg water quality and watershed influences must be created among educational staff in First Nations schools, both teaching staff and administrative staff involved with curriculum development.

Public Response

The University of Manitoba Zoology students feel that curricula relating to environmental stewardship should be a part of early education (K-5), with an emphasis on water stewardship using Lake Winnipeg as a case study. They said grants in aid of research could be targeted to Masters and Doctoral students to develop these curricula.

Many people expressed their support for public education related to pollution, the issues facing Lake Winnipeg, and the environment in general.

They also suggested incorporating class field trips to local streams, rivers, reservoirs, and lakes into school science programs (elementary and secondary) to teach children about the importance of waterways, the concept of watersheds, and how their communities influence the conditions downstream. In addition, they felt expanding the involvement of high school classes in water quality monitoring of lakes and rivers, class trips on the Lake Winnipeg vessel Namao, shoreline surveys, and river sampling would be valuable.

They suggested the development of an interactive database accessible to schools to collate field data collected in school science programs. This database could be used, they contend, to teach students how to collect valuable information about streams, rivers, ponds, and lakes, and to share it with classmates across the province. They point out quality control would be necessary to increase the value of the database, supplemented with scientist-teacher interactions.

A University of Winnipeg microbiology professor strongly agreed with the need to expand education in this area, and suggested it should be included in university programs as well.

A Virden resident suggested that in addition to an education program for school children, every government official (elected, appointees, and employees) should be instructed through a compulsory three or four-day water, air, and environmental protection program taught by highly qualified people.

Class field trips would be valuable in teaching children about the importance of waterways and the concept of watersheds.

Recommendation 31 Public Education on Water Quality Protection.

31.1 The Province of Manitoba should develop a public education campaign/program to help Manitobans understand the importance of making the appropriate personal choices on issues that will affect water quality in Lake Winnipeg and its watershed.

Public Response

Many people expressed their support for public education related to pollution, the issues facing Lake Winnipeg, and the environment in general. The use of the mass media and modern technology through websites, documentaries, television advertising, and other publicity vehicles, was touted as an effective way to educate the public about the issues and equip them with the information necessary to make informed choices.

Both the Manitoba Cattle Producers Association and the Keystone Agricultural Producers would like to ensure that the messages are balanced, and not biased against agriculture.
The University of Manitoba Zoology students said better consultation and cooperation with the agricultural community is needed. They said farmers have long been the stewards of the land, and keeping them involved is necessary for the success of reducing nutrient loading to Lake Winnipeg. They suggested public information sessions be held in all communities to inform residents about the consequences of over-using fertilizer, and how to reduce agriculture crop inputs.

Recommendation 32 The Lake Winnipeg Stewardship Board's First Interim Report – Public Discussion.

32.1 The Board recommends that a focused public discussion will be undertaken on many of these recommendations, and with those who may be affected by these recommendations.

Public Response

Generally, those that attended the public meetings found the process to be useful and informative. First Nation community members in Black River and Nelson House suggested that further public discussion take place with other First Nation communities living along and downstream of Lake Winnipeg.

The Board's website appears to have been an effective means of soliciting input from the public regarding the Interim Report. There were nearly 7300 downloads of the report between February 18 and May 31, 2005. Many public responses were received electronically.

Below: Participants view the Lake Winnipeg presentation.

Issues Raised by the Public Not Specifically Addressed in the Interim Report

Devil's Lake Outlet

The Devil's Lake outlet project was an issue many respondents felt compelled to discuss. One Winnipeg resident called for the Manitoba Government to immediately establish environmental standards legislation and guidelines for salinity, phosphorus, and nitrogen concentrations of water entering the Lake Winnipeg Basin. The suggestion was that if these levels are exceeded in the water from Devil's Lake, the project could be stopped.

The Devil's Lake outlet project was an issue many respondents felt compelled to discuss.

Students of Advanced Limnology at the University of Manitoba Zoology Department, under the guidance of their professor, described the Devil's Lake outlet project as a priority issue and provided several suggestions for action.

First, the students called for new watershed protection legislation to control the major contributors of nutrients into the entire ecosystem, specifically including the Prairie Provinces and adjoining states, and for federal action on imposing "The Water Protection Act" – Bill 22. The International Joint Commission should conduct an environmental assessment of the Devil's Lake outlet, they said. They further suggested that states in Red River Basin should similarly adopt a phosphorus objective of 1 mg/L on municipal and industrial effluent concentrations. Further research on the effects of species introductions on Lake Winnipeg nutrient levels and overall ecosystem function was called for.

A group of students from Gimli expressed concern over Devil's Lake, citing the potential negative economic impact on Gimli and other communities around the lake. The loss of the fishing industry would mean lost jobs, a decrease in tourism, and the end to many towns in the area. They expressed a sincere concern for the quality of water in Lake Winnipeg, and the impact deteriorating water quality could have on lakeshore economies and lifestyles.

A Ste. Rose du Lac resident felt very strongly that there should be more Provincial and Federal opposition to the proposed Devil's Lake project. This point of view was supported by a number of Manitobans who expressed concern over the potential impact of the Devil's Lake outlet on Lake Winnipeg.

Intensive Hog Production

Many respondents provided comment on the hog industry.

Many respondents provided comment on the hog industry. An Arborg resident noted that, in its Interim Report, the Lake Winnipeg Stewardship Board did not discuss the issue of intensive hog operations in areas surrounding Lake Winnipeg. He alleged that irresponsible management of hog manure has occurred in his area through illegal pumping from a lagoon into a low area which flows directly into Lake Winnipeg. He called for a better plan to deal with growing number of hog operations, and the waste they produce.

A resident of Gimli wondered how livestock waste (hog manure) ended up on Lake Winnipeg beaches if manure is not supposed to escape from the boundary of the agricultural property. In his opinion, liquid hog waste is untreated sewage and should be classified as a hazardous waste by-product and dealt with under Federal regulations.

Other concerns he expressed included over-application of manure and associated runoff, unsafe stowage of pig carcasses, manure lagoons constructed in areas where groundwater contamination is a threat, and deteriorated hog slurry storage containers.

A Brandon resident questioned who monitors hog barns to determine whether they comply with Provincial standards.

An intensive hog production facility.

In its submission to the Board, the Manitoba Pork Council re-enforced, on behalf of its 1400 members, its commitment to the environment saying its members take the responsibility for wise stewardship of the air, soil, and water very seriously. The Council continued by describing the support it has provided for research work undertaken on Lake Winnipeg through the Lake Winnipeg Research Consortium. It also indicated it has provided over $5.4 million toward environmental and production research, supporting programs at the University of Manitoba, the Prairie Swine Centre in Elstow, Saskatchewan, and the Manitoba Livestock Manure Management Initiative.

The Council expressed the belief that government and the industry must work together to achieve sustainable development goals, and expressed it support for the Board's efforts.

Industrial Pollution

A Pine Falls physician felt the Interim Report did not place enough focus on the impact of industrial discharges on the quality of water in Manitoba. The respondent expressed concern over pollution loads which may be impacting both the ecosystem and public health through contaminated drinking water. She also expressed concern about the dams along the Winnipeg River and the erosion evident along the river.

A Pine Falls physician strongly urged the Lake Winnipeg Stewardship Board to highlight industry as a contributor to the problem of an unsafe and contaminated water supplies.

She indicated that Elders of the Sagkeeng First Nation have noted the loss of wildlife in the area, attributing the loss to polluted water. They also believe that the increase in the incidence of certain health problems in the area can also be connected to water pollution. She advocates the "precautionary principle", which supports taking preventative action where there is a risk to human health, without waiting for scientific certainty and consensus.

She strongly urged the Lake Winnipeg Stewardship Board to highlight industry as a contributor to the problem of an unsafe and contaminated water supplies. She also called for the Board to recommend swift action in supporting water and earth restoration programs that could employ local community members. She said those responsible for the contamination of the water supply should be held accountable and must play a strong role in funding clean-up and restoration efforts.

Commercial Fishing

The issue of commercial fishers leaving rough fish on (or in) the lake and dumping fish cleanings into the lake was considered a water quality problem by at least two Interlake residents. Both suggested there must be a market for the rough fish, instead of disposing of them in the lake.

Conclusion

Through a public participation process, the Lake Winnipeg Stewardship Board set out to determine the public's views on its Interim Report and associated recommendations. Based on the contributions of those who participated in the process, the Board will take into consideration all comments and suggestions while reviewing its current recommendations, and in the preparation of its final report.

Perhaps the most often expressed issue was that of the potential financial impact and cost to municipalities, towns, and the agriculture industry for implementation of many of the recommendations listed in the report. These include the implementation of beneficial management practices to address livestock manure management and upgrading of sewage systems. In many cases, financial incentives and assistance were called for.

Perhaps the most often expressed issue was that of the potential financial impact for implementation of many of the recommendations listed in the report.

Throughout the process, the suggestion was offered that most new initiatives under the recommendations listed must be subject to cost-benefit analyses. This was especially true in dealing with municipal wastewater and sewer treatment issues, such as the expanded capacity of municipal lagoons. Those nutrient reduction strategies offering the largest benefit for the lowest cost should be prioritized.

Many of the respondents called for better enforcement of existing legislation, better monitoring, and more inspections – of drainage projects, livestock operations, septic fields and tanks, municipal sewage systems, tile drainage, and water quality in general. However, most of these same contributors acknowledged that staffing and other resources (in the Provincial Government, in particular) are lacking. To that end, most felt the cost of increasing the number of qualified staff would be justified.

On the issue of more legislation – while some called for stronger laws, most preferred to apply education and incentives to achieve the aims of the Board. Education, both in schools and for the general public, received strong support from all sectors.

While some respondents called for stronger laws, most preferred to employ education and incentives to achieve the Board's aims.

Many respondents pointed to the large contribution of nutrients originating from outside Manitoba, suggesting that more needs to be done to work with other jurisdictions to set reduction targets. In general, continued or enhanced communication with these jurisdictions, and in particular the United States, was strongly encouraged.

The use of constructed wetlands, and the re-establishment of natural wetlands in the Red River Basin, to decrease the impacts of flooding and to cleanse the natural system of excess nutrients was generally favoured.

The issue of establishing soil phosphorus limits drew a variety of responses. Representatives of the agriculture industry cautioned against imposing limits that are too stringent, and insisted that the industry is cognizant of the phosphorus issue and acts in an appropriate, responsible manner.

Some considered the reduction of phosphorus fertilizer use for cosmetic purposes to be very important while others gave it a lower priority. Consultation with the lawn and garden supply industry was suggested.

The need for good science on Lake Winnipeg was communicated by many. It was recognized that issues such as the impact of Lake Winnipeg regulation on water quality in the lake are not well understood, and need to be further investigated.

At least two respondents encouraged the Lake Winnipeg Stewardship Board to adopt the "precautionary principle" as a guiding principle for Lake Winnipeg. In short, this principle states that when an activity threatens harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

Many commented the report was balanced with respect to "collective responsibility", and congratulated the Board on its efforts.

Many respondents commented the report was balanced with respect to "collective responsibility", and congratulated the Board on its efforts. However, there were many others who, while supporting the Board in principle, felt agriculture in particular was being singled out as the main contributor to degraded Lake Winnipeg water quality, and were being asked to bear the brunt of the "repair bill".

The input received from the public discussion process will be very helpful to the Board as it works towards preparing its final report. The Board will encourage and welcome further public and expert input during this next phase of the its work.

Below: Hecla Island.

Appendices

Appendix 1: Lake Winnipeg Stewardship Board Member Biographies

Appendix 2: Press Release - Interim Report

Appendix 3: Public Discussion Feedback Form

Appendix 4: Public Meeting Newspaper Advertisement/ Media Distribution

Appendix 5: Lake Winnipeg Stewardship Board Web Site Use Summary

Appendix 6: Public Registry Locations

Appendix 1: Lake Winnipeg Stewardship Board Member Biographies

Chair **BILL BARLOW** is a former Mayor of Gimli and Chair of the Eastern Interlake Planning District, and is retired from teaching at Gimli High School. He is presently a member of the Manitoba Municipal Board.

GARRY BROWN farms near Dugald. He was a long-time councillor for the RM of Springfield, and a former Chair of the Cooks Creek Conservation District.

HELGI EINARSSON is a commercial fisher on north basin of Lake Winnipeg, and an agent of the Freshwater Fish Marketing Board. He also owns and operates a lodge on Dauphin River, and is Mayor of Dauphin River Community Council.

DON FLATEN, Ph.D. is a soil scientist with the Faculty of Agricultural and Food Sciences, University of Manitoba.

LES FELSCH is a farmer and member of Keystone Agricultural Producers executive as the District 4 representative.

ROBERT T. KRISTJANSON has been a commercial fisher on Lake Winnipeg for over 50 years.

VERA MITCHELL is an educator/administrator for Poplar River First Nation. She is an advocate for First Nations People's rights, and for sustainable environmental principles.

SAM MURDOCK, a commercial fisher, is former Chief of the Fisher River First Nation. He is a Director on the Board for the Lake Winnipeg Advisory Committee and President of the Fisher River McBeth Fisheries.

CHRIS PAWLEY is serving his third term as a member of Selkirk's City Council and a member of the Association of Rural Municipalities. He is also a member of the Red River Basin Commission-North Chapter.

ALEX SALKI holds the position of Senior Research Biologist with the Federal Department of Fisheries and Oceans - Lake Winnipeg Project. He is the Science Program Coordinator for the Lake Winnipeg Research Consortium, a steering committee member for Climate Change Connection, and member of the Department of Fisheries and Oceans Experimental Lakes Area Research Team.

ED SCHREYER, former Premier of Manitoba and Governor General of Canada, has also held the position of High Commissioner to Australia, Papua New Guinea, Solomon Islands, Vanuatu. He has also been Visiting Professor of Resource Economics in Global Context at universities in Canada and Germany.

BEV SMITH is currently serving her second term as councilor for Brokenhead Ojibway Nation. Her commitment to the protection and sustainability of Lake Winnipeg is based on her historical and spiritual connection to the land and the lake, through her family and her community.

NORMAN STAGG is a commercial fisher on Lake Winnipeg, and a former Chief of the Dauphin River First Nation. He is currently serving as an Economic Development Officer for Dauphin River First Nation.

NICK SZOKE is Senior Engineer and Branch Head of Wastewater Planning for the Water and Waste Department, City of Winnipeg. As a licensed professional engineer, he is registered with the Association of Professional Engineers and Geoscientists of the Province of Manitoba (APEGM). He is also a member of the Board of Directors for the Canadian Public Works Association, and a long-standing member of the Western Canada Water and Wastewater Association, and Water Environment Association.

GARY WASYLOWSKI is a beef cattle producer, Reeve of the RM of Armstrong and Rural Vice-President of the Association of Manitoba Municipalities.

DWIGHT WILLIAMSON is Director of Water Science and Management Branch, Manitoba Water Stewardship.

HALINA ZBIGNIEWICZ is Manager, Operations Planning – Manitoba Hydro.

Appendix 2: Press Release - Interim Report

February 18, 2005 -- LAKE WINNIPEG STEWARDSHIP BOARD INTERIM REPORT RELEASED
Government Taking Immediate Action: Ashton

Water Stewardship Minister Steve Ashton received the interim report from the Lake Winnipeg Stewardship Board today. The report makes recommendations to help Manitoba reduce nutrient levels in Lake Winnipeg. Ashton immediately pledged action on implementing 23 of the recommendations.

"I accept in principle the majority of these recommendations and our government will move promptly to put into action those recommendations that are quickly attainable," said Ashton.

Ashton noted this report, which cites 32 recommendations, reinforces the province's existing efforts as the government has already begun work on 10 of the recommendations.

"This interim report proves we are on the right track in our endeavour to bring Lake Winnipeg's nutrient status to its pre-1970s conditions. We began taking action on the lake after preliminary scientific studies were completed, by announcing the Lake Winnipeg Action Plan in February 2003 which included the establishment of the Lake Winnipeg Stewardship Board. One of the board's main objectives was to provide a detailed report that will provide useful guidance as we continue the critical work of reaching a 10 per cent reduction in nitrogen and phosphorus levels."

One of the interim report recommendations encourages the need for continued work with neighbouring jurisdictions to reduce nutrient loadings entering Manitoba.

"I have raised this issue with my federal and provincial counterparts on numerous occasions, and I will continue to have further discussions on how we can develop a national strategy to protect our most valuable resource," said Ashton.

Another recommendation calls for the review of agricultural land drainage networks on a watershed basis. "We will move immediately on this recommendation by ensuring that a water quality impact assessment will be included in all licensing decisions. We will also begin to plan and develop ways of undertaking environmentally-friendly drainage."

The minister noted the nine remaining recommendations that were not adopted in principle will be either referred back to the Lake Winnipeg Stewardship Board for further public discussion or to other government departments for analysis, consideration and/or implementation.

The Manitoba government has undertaken a number of initiatives since 2003 to address nutrient loading from all sources and sectors in Manitoba:

- Limitations were placed on manure spreading and the location of spread fields, and 16 new inspectors were hired for enforcement.
- A Riparian Areas Tax Credit was created and expanded to encourage the protection of vegetative cover along rivers and streams.
- A soil testing awareness program was launched to prevent over-application of fertilizer.
  Sponsored research was conducted on the scientific research vessel Namao.
- Water Stewardship, Fisheries and Oceans Canada, and Environment Canada held a Lake Winnipeg science workshop and are working towards developing a collaborative long-term science plan for the lake.
- Nutrient limits were incorporated into the new municipal sewage treatment license issued for the City of Winnipeg's west-end sewage treatment plant upgrades with licenses for others to follow shortly.
- An On-site Sewage Disposal Regulation was passed to set stricter limitations on location of holding tanks and septic fields.

- A Clean Beaches Program was introduced this past summer with public awareness campaigns for beach goers and cottagers.
- An agreement was reached, led by Manitoba, with Minnesota and North Dakota, to reduce nutrients flowing into the Red River and into Lake Winnipeg by 10 per cent. The agreement was recently endorsed by the International Joint Commission (IJC) and sent by the IJC to the Canadian Department of Foreign Affairs and the U.S. secretary of state.
  Manitoba continues to fight the Devil's Lake outlet project that will bring even more harmful nutrients and other pollutants to Manitoba waterways.

In addition to specific actions for Lake Winnipeg, a first-of-its-kind Drinking Water Safety Act was passed by the government of Manitoba which brought in a subsidy for drinking water tests, an Office of Drinking Water was opened, 12 new drinking water officers were hired and $79 million was invested in drinking water and sewer infrastructure across the province.

The minister also said that speedy passage of the Water Protection Act will help fulfill many of the recommendations in the report. "For example, water management zones will limit nutrient application in sensitive areas. Water management zones will also be used to guide municipal and environmental licensing decisions on lagoon locations, the spreading of sludge and the siting and management of subdivisions."

The Lake Winnipeg Stewardship Board comprises 18 members with representatives from a variety of interests and sectors including municipal, First Nations, agriculture, commercial fishing and science.

"The board recommends that its report now be used for public discussion and I have asked the board to lead this discussion and to report back by the end of June," said Ashton. "I also want to thank the board for its hard work in preparing this technically-complex report with well-reasoned recommendations that have far-reaching significance for the health of Lake Winnipeg, its watershed and the downstream environment."

Appendix 3: Public Discussion Feedback form

Lake Winnipeg Water Quality

Share Your Views with the Lake Winnipeg Stewardship Board
Your input is important!
"Our Collective Responsibility - Reducing Nutrient Loading to Lake Winnipeg"
An Interim Report to the Minister of Manitoba Water Stewardship (January, 2005)

Feedback Form

On February 18, 2005 Minister Ashton released the Lake Winnipeg Stewardship Board's Interim Report: Our Collective Responsibility - Reducing Nutrient Loading to Lake Winnipeg. The report makes recommendations on 32 separate issues aimed at reducing nutrient loading to Lake Winnipeg.

Minister Steve Ashton has requested the Board facilitate public discussion on the report and its recommendations. In particular, the Board has been asked to gather feedback on four of its 32 recommendations. The Board is encouraging the public to provide written comments rather than verbal comments, so that your feedback can be communicated effectively with all Board members.

A copy of this feedback form and the Board's Interim Report is also available on the Board's web site: www.lakewinnipeg.org. You are welcome to provide your feedback responses by email.

- Please mail, or email feedback forms to:

Lake Winnipeg Stewardship Board
P.O. Box 305
Gimli, Manitoba R0C 1B0

Email: info@lakewinnipeg.org

PLEASE COMPLETE THE FOLLOWING:
Name: _____
Mailing Address: _____
_____
Phone: _____
Email: _____

Copies of the public responses will be placed in the public registries located throughout Manitoba. Please sign here if you do not want your comments placed in the Lake Winnipeg Stewardship Board public registry: _____

Deadline for comments to be considered for the report on Public Discussion is May 31, 2005. **Comments received after May 31, 2005 will be considered prior to the Board's final report scheduled for July, 2006.**

Instructions for Completing Feedback Form:

Please review the following recommendations and circle one of the responses following each recommendation. There is space provided at the end of this form for additional comments on these and other recommendations. Note that additional "background" information is contained in the Interim Report.

I. Recommendation 2.0: Nutrient Loss from Confined Livestock Areas and Over-Wintering Sites (From page 22 of Interim Report).

Background Summary:

- Livestock manure is a significant source of phosphorus in the environment.
- Nutrients (nitrogen and phosphorus) from livestock manure are transported from confined areas such as feedlots and wintering sites, during spring runoff and summer precipitation events.
- The risk of nutrient transport to surface waters is higher where land is sloped and the soils provide poor infiltration. Runoff from these sites may also contain other contaminants such as pathogens (e.g., Escherichia coli O157) and livestock pharmaceuticals.

Recommendations:

2.1 Drainage from confined areas should be directed to retention basins, grassed buffer strips, and constructed wetlands, or other effective nutrient reduction practices should be employed.

PLEASE CIRCLE ONE:

Strongly agree Agree Disagree Strongly disagree No comment

2.2 Where possible, holding areas and wintering areas should be used on a rotational basis to prevent a build-up of nutrients in the soil. Otherwise, manure in confined holding areas should be regularly removed and applied to crop or pasture lands at agronomic rates.

PLEASE CIRCLE ONE:

Strongly agree Agree Disagree Strongly disagree No comment

2.3 Legislation should be reviewed and revised where appropriate to include small as well as large livestock operations, and to ensure that new or expanded confined operations are constructed to meet contemporary environmental standards.

PLEASE CIRCLE ONE:

Strongly agree Agree Disagree Strongly disagree No comment

2.4 Government should intensify its agriculture extension programs (such as those offered by Manitoba Agriculture, Food, and Rural Initiatives) and those delivered in partnership with existing or new programs to help producers assess the environmental risk of their operations, and to provide advice on how to prevent the contamination of groundwater and surface water.

PLEASE CIRCLE ONE:

Strongly agree Agree Disagree Strongly disagree No comment

Timeframe: Medium-term (1- 4 years)
Who should implement: Province of Manitoba

II. Recommendation 10.0: Cosmetic Use of Phosphorus-Based Fertilizers (From page 29 of Interim Report).

Background Summary:

- Phosphorus-based fertilizers used for cosmetic purposes are a relatively small contributor to the overall nutrient loading to Lake Winnipeg, but still deserve attention.
- In Manitoba, fertilizer use on lawns is widespread in urban centres, lakeside cottages, Provincial and Federal parks, and properties surrounding Provincial and Federal government buildings.
- In most situations, these fertilizers are applied in the absence of a soil test which would determine whether the soil is actually deficient in nitrogen or phosphorus.
- While phosphorus is an essential plant nutrient for lawns, many of Manitoba soils have an abundant supply of natural phosphorus.
- Also, when fertilizers are broadcast over lawns, some will unintentionally be applied to impervious surfaces such as sidewalks and driveways. There is a significant risk that this "over-spread" will be washed into storm drains which lead to rivers and lakes.
- As of January 1, 2004, a law came into effect in the St. Paul and Minneapolis metropolitan area in Minnesota that restricts the use of lawn fertilizers.
- In this region, fertilizers may not contain phosphorus, and in Greater Minneapolis, the phosphorus content is restricted to no more than three per cent. It is illegal to spread fertilizer on hard surfaces such as sideways and driveways.
- These Minnesota restrictions do not apply to fertilizers used on agricultural crops, flower and vegetable gardens, or on golf courses.

Recommendations:

10.1 The Province should explore the option of implementing province-wide restrictions on the use of phosphorus-based fertilizers for cosmetic use in Manitoba.
PLEASE CIRCLE ONE:
Strongly agree Agree Disagree Strongly Disagree No comment

10.2 The Province of Manitoba and the Government of Canada should implement restrictions on the cosmetic use of phosphorus fertilizers for lawn care on provincial and federal properties.
PLEASE CIRCLE ONE:
Strongly agree Agree Disagree Strongly Disagree No comment

10.3 Canada should institute a consistent policy for the use of fertilizers for cosmetic use on all Federal lands, including National Parks and First Nation communities.
PLEASE CIRCLE ONE:
Strongly agree Agree Disagree Strongly Disagree No comment

Timeframe: Short-term (6 - 12 months)
Who Should Implement: Province of Manitoba

III. Recommendation 21.0: Storage Requirements for or Municipal Lagoons
(From page 37 of Interim Report).

Background Summary:
- In Manitoba, municipal sewage lagoons are generally required to be constructed with sufficient capacity to store wastewater for 220 days.
- A longer storage capacity would increase the opportunity for effluent irrigation, enhance the level of treatment, and reduce the risk of emergency discharges during wet periods.
- Nutrient data should be gathered from Manitoba and other jurisdictions with similar climates to determine the benefits of increasing the storage period to 400-days.

Recommendation:

21.1 The Province should explore the option of expanding the storage capacity of new and expanded lagoons to 400 days. Water conservation strategies will assist municipalities in realizing this capacity.

PLEASE CIRCLE ONE:

Strongly agree Agree Disagree Strongly Disagree No comment

Timeframe: Medium-term (1 - 4 years)
Who should implement: Province of Manitoba

IV. Recommendation 24.0: Septic Field Alternatives (From page 39 of Interim Report).

Background Summary:
- Many septic fields in the Lake Winnipeg watershed are not functioning adequately.
- Septic fields are not an appropriate technology for containing and treating wastes in high-density communities.
- Septic systems located in heavy clay soils may eventually become saturated, leading to overland flow of waste into drainage ditches. Where there is little soil above bedrock, flow may carry nutrients and pathogens directly into watercourses.
- Many septic fields are old or are undersized as homes and cottages may have been expanded in size and water consumption has increased since the fields were installed.
- Septic field inspections are limited. Inspections are often complaint-driven.
- Incentives should be given for implementing alternative waste treatment systems that reduce nutrient loading such as composting systems and bio-filters including peat moss treatment systems, and constructed mini wetlands.
- Separating grey-water from black-water, and reusing grey-water should be explored.
- A focused educational campaign should be undertaken to provide guidance on how to recognize when they are failing.

Recommendations:

24.1 There is a need to implement regional sewage treatment plants with nutrient removal capabilities prioritizing areas such as those in high residential density, and proximity to waterbodies.

PLEASE CIRCLE ONE:

Strongly agree Agree Disagree Strongly Disagree No comment

24.2 Where regionalization of sewage treatment is not feasible, or as an interim measure until regionalization is practicable, alternatives to septic fields should be explored.
PLEASE CIRCLE ONE:
Strongly agree Agree Disagree Strongly Disagree No comment

24.3 The Province should explore the option of instituting an annual levy to recover the costs of conducting an ongoing comprehensive septic field inspection program, and maintaining a septic field database in the Province.
PLEASE CIRCLE ONE:
Strongly agree Agree Disagree Strongly Disagree No comment

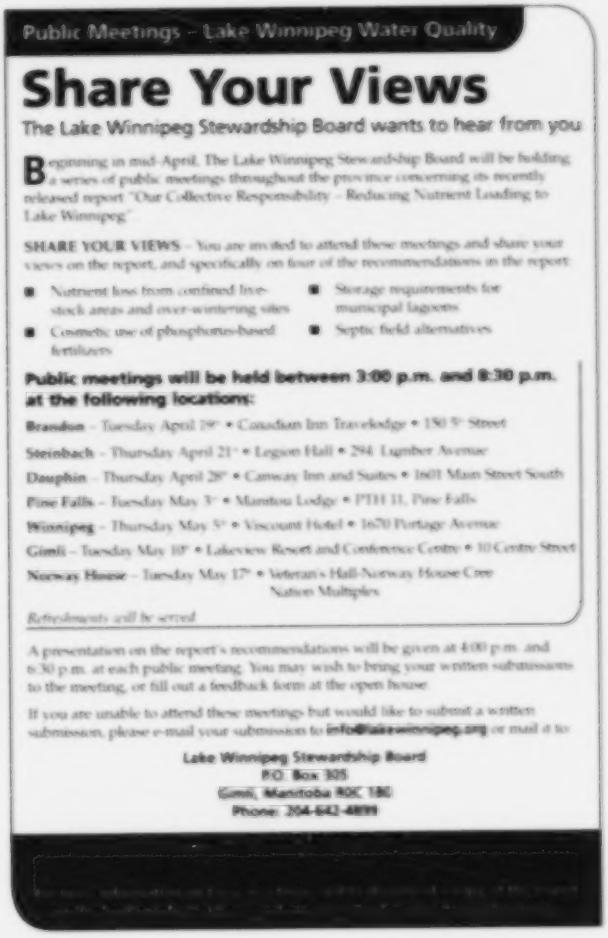
Timeframe: Short-term (6 - 12months)
Who should implement: Province of Manitoba

Additional Comments:
Please provide comments on the above four recommendations, other recommendations contained in the Interim Report (please refer to Interim Report to review these recommendations), and issues identified in Appendix F of the Interim Report (issues requiring further deliberations and recommendations by the Board). Please attach additional pages or use reverse side of this page should you require more space.

Appendix 4: Public Meeting Newspaper Advertisement/ Media Distribution

Public Meetings - Newspaper Advertising

Newspaper Advertising
Brandon Sun
Brandon Wheat City Journal
Dauphin Herald
The Drum
Grandview Exponent
Grassroots News
Interlake Spectator
Lac du Bonnet Leader
La Liberte
Morris Scratching River Post
Selkirk Journal
Steinbach Carillon
Thunder Voice News
Winnipeg Free Press
Winnipeg River Echo
Winnipeg Sun



Public Meetings – Lake Winnipeg Water Quality

Share Your Views

The Lake Winnipeg Stewardship Board wants to hear from you

Beginning in mid-April, The Lake Winnipeg Stewardship Board will be holding a series of public meetings throughout the province concerning its recently released report "Our Collective Responsibility – Reducing Nutrient Loading to Lake Winnipeg".

SHARE YOUR VIEWS – You are invited to attend these meetings and share your views on the report, and specifically on four of the recommendations in the report:

- Nutrient loss from confined livestock areas and over-wintering sites
- Cosmetic use of phosphorus-based fertilizers
- Storage requirements for municipal lagoons
- Septic field alternatives

Public meetings will be held between 3:00 p.m. and 8:30 p.m. at the following locations:

Brandon – Tuesday April 19th • Canadian Inn Travelodge • 150 5th Street

Steinbach – Thursday April 21st • Legion Hall • 294 Lumber Avenue

Dauphin – Thursday April 28th • Camway Inn and Suites • 1601 Main Street South

Pine Falls – Tuesday May 3rd • Manitou Lodge • PTH 11, Pine Falls

Winnipeg – Thursday May 5th • Viscount Hotel • 1670 Portage Avenue

Gimli – Tuesday May 10th • Lakeview Resort and Conference Centre • 10 Centre Street

Norway House – Tuesday May 17th • Veteran's Hall-Norway House Cree Nation Multiplex

Refreshments will be served

A presentation on the report's recommendations will be given at 4:00 p.m. and 6:30 p.m. at each public meeting. You may wish to bring your written submissions to the meeting, or fill out a feedback form at the open house.

If you are unable to attend these meetings but would like to submit a written submission, please e-mail your submission to info@lakewinnipeg.org or mail it to:

Lake Winnipeg Stewardship Board
P.O. Box 305
Gimli, Manitoba R0C 1B0
Phone: 204-642-4899

Appendix 5: Lake Winnipeg Stewardship Board Website Use Summary

Lake Winnipeg Stewardship Board Website Usage, February - May, 2005

Category/Month	February	March	April	May	Total
Total Visits [1]	553	1055	1226	595	3429
Number of Web Pages Viewed per Visit [2]	10	6	7	8	8 (avg.)
Number of Downloads of Interim Report [3]	2569	1579	2075	1075	7298

[1] The "Total Visits" represents access from a particular computer, and do not account for mulitple users from a single terminal (e.g. school or library).
[2] The relatively high number of web pages viewed per visit indicates that those who visited the site spent time reviewing material posted on the site.
[3] Note that number of downloads of the Interim Report exceeded the total visits each month.

Appendix 6: Lake Winnipeg Stewardship Board Public Registry Locations

Copies of the submissions from those who have consented to have their comments made public will be placed in the public registry. Locations of the public registry are listed below.

Conservation & Environment Library (123 Main St, Winnipeg)
Legislative Library (450 Broadway Ave, Winnipeg)
Manitoba Eco-Network (3-303 Portage Ave., Winnipeg)
Centennial Public Library (251 Donald St, Winnipeg)
Western Manitoba Regional Library (Brandon)
Lakeland Regional Library (Killarney)
Border Regional Library (Virden)
Selkirk & St. Andrews Regional Library (Selkirk)
Brokenhead River Regional Library (Beausejour)
Bibliotheque Allard (St. Georges)
Portage la Prairie City Library (Portage la Prairie)
Jake Epp Public Library (Steinbach)
South Central Regional Library (Morden)
Thompson Public Library (Thompson)
Manitoba Keewatinowi Okimakanak Inc. (Thompson)
Flin Flon Public Library (Flin Flon)
The Pas Public Library (The Pas)
Churchill Public Library (Churchill)

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